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ABSTRACT

The 1994-1995 study of the Kentucky Education Reform Act (KERA) Preschool Programs constitutes the fourth year of evaluation of the state-mandated preschool programs for at-risk 4-year-old children and 3- and 4-year-olds with disabilities. The report is divided into sections which discuss the methodology and the results (the bulk of the report) of the evaluation. Evaluation questions 1 and 2 focused on developmental skills, social skills, and early literacy skills for economically at-risk preschoolers, preschoolers with disabilities, African-American preschoolers, and comparison children. Evaluation Question 3 focused on teachers' ratings of academic performance and expectations for future success for kindergarten, first-, second-, and third-grade children. Evaluation Question 4 consisted of a parent survey. Among the major findings were the following: (1) the overall rate of development for economically at-risk KERA preschool participants was significantly higher than that of a comparison group of income eligible peers who did not participate in the KERA Preschool Program; (2) longitudinal research through the primary grades on the social skills, academic competence, and behavior adjustment of former KERA economically at-risk preschoolers indicates they consistently do as well as or better than same-age classmates; (3) positive gains were observed across all groups of children with disabilities; and (4) the parent survey reported high levels of satisfaction with the programs. (DR)

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THIRD PARTY EVALUATION OF THE KENTUCKY EDUCATION REFORM ACT PRESCHOOL PROGRAMS

College of Education
and
College of Human Environmental Sciences

University of Kentucky
Lexington, Kentucky

August, 1995

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Executive Summary

A Comprehensive Preschool Program

Kentucky's legislators recognized that the best way to enhance children's chances for success in school and their attainment of high levels of achievement is to ensure that they get off to a good start in school. Thus, a tuition-free statewide preschool program was created in 1990 to help young at-risk children reach their full potential. The Kentucky Education Reform Act (KERA) Preschool Program is a comprehensive early childhood educational delivery system which provides developmentally appropriate programs for children, integrated services to families, and interdisciplinary and interagency collaboration among organizations serving young children in Kentucky.

Eligibility

KERA was created as a means of equalizing educational opportunities for all children. As a result, the KERA Preschool Program targets four-year-old children from low-income families and three- and four-year-old children with disabilities. Each school district is required to make services available to all eligible children, either through district-provided programs or through contracts with other public or private service providers (KRS 157.3175 and KRS 157.226). Local districts must collaborate with Head Start to maximize use of federal funds available to serve eligible four-year-old children. The implementation of the KERA Preschool Program was mandatory for all districts beginning in the 1991-1992 school year.

Eligibility for the program is determined in two ways. First, four-year-old children who qualify for free lunch under the national school lunch program are considered at-risk and thus are eligible for the program. Four-year-old children who are not income eligible may be served as space permits. Second, three and four-year-old children with disabilities who qualify for services under Public Law 99-457 are eligible for the program.

Purposes of the 1994-1995 Program Evaluation of KERA Preschool Programs

The 1994-1995 study of KERA Preschool Programs constitutes the fourth year of the evaluation of the state mandated preschool programs for at-risk four-year-olds and three- and four-year-old children with disabilities. The first major purpose of this phase of the evaluation was to compare the progress of the KERA Preschool Program participants to a comparison group of their peers who had not attended the KERA Preschool Program. The second major purpose was to assess the extent to which parents were satisfied with the KERA Preschool Programs and their perceptions of the programs' effects on their children and their families.

Methodology

Sampling Procedure for District Selection

The same school districts that had been used in the previous three years of the evaluation were used for the 1994-1995 evaluation. These districts were identified in the Fall of 1991 using a stratified sampling strategy designed to yield a representative sample of geographic regions (east, west, central), economic development levels (high, low), and program type (district provided versus contracted). A total of 24 districts with district provided programs and 12 districts with contracted programs were identified.

Sampling Procedure for KERA Preschool Participants (Cohort 5)

The procedure for determining numbers of children within districts was similar to the procedures used during the 1993-1994 evaluation. The number of children selected from a district was based on the number of children who attended KERA Preschool Programs in that district relative to the number of children who attended KERA Preschool Programs in the other districts that were sampled. This provided a sample of children that closely represents the proportion of children in the total population of KERA preschool children in the state.

Identification Procedure for Comparison Preschool Participants

The KERA Preschool Evaluation staff used several means to attempt to locate potential comparison children. These involved: contacting parents whose children had participated as comparison

children before, looking for siblings who met the criteria; contacting Head Start Directors and Preschool coordinators for waiting lists of children wanting to participate in their programs, or names of children who had dropped out of their programs; and contacting child care providers for names of children who met our criteria but had dropped out of their programs.

KERA Preschool Participants and Comparison Groups from 1993-94 (Cohort 4), 1992-93 (Cohort 3), 1991-92 (Cohort 2), and 1990-91 (Cohort 1)

KERA Preschool participants were randomly selected from the participating classrooms of eligible children. Comparison children were randomly selected from the same classrooms that the former KERA preschool participants were attending. Consequently, the comparison groups for these cohorts include children from a variety of income and ability levels represented in the particular school setting.

Instrumentation (Cohort 5)

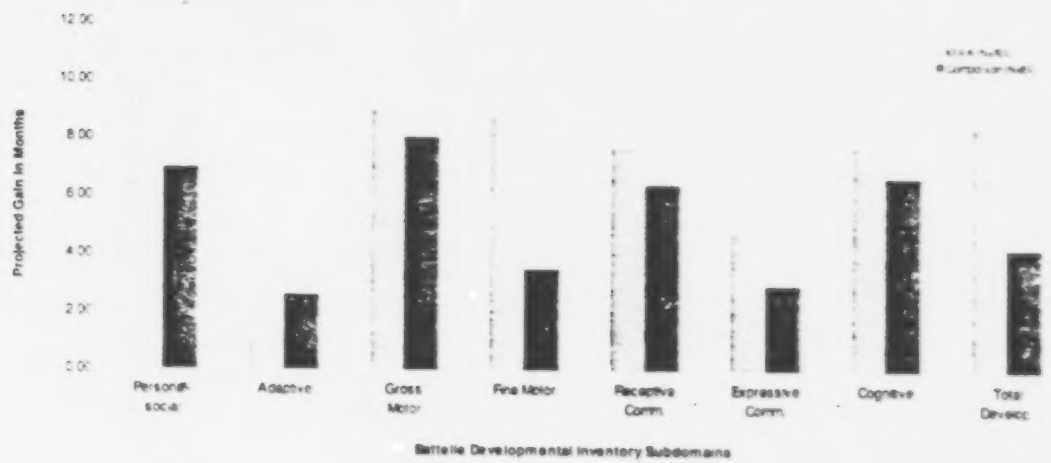
A variety of measures were used to assess the developmental, social, and academic gains of the KERA participants and their comparisons. The 1994-95 KERA Preschool participants and a comparison group of eligible peers who did not participate in the program received the following tests in the fall (pretest) and spring (posttest): Battelle Development Inventory and Early Literacy Measures.

Current teachers of children in cohorts 1,2, 3, and 4 completed the Teacher Social Skills Rating Scale and a teacher survey rating the children's academic progress and projected future success in school. Parents completed the Parent Social Skills Rating Scale. In addition, the teachers of the 1993-94 (Cohort 4) KERA preschool participants and a comparison group completed the Behavior Assessment System for Children-Teacher Rating Scale.

Results

Results indicate that the rate of overall development of the 1994-1995 KERA Preschool participants (1994-1995 Cohort) is significantly greater than the developmental rate of nonparticipants (See Figure 1).

Figure 1
Mean Projected School Year Developmental Gains for Economically At-Risk KERA Preschoolers and Comparison Children



These findings are consistent with previous evaluation trends and indicate that children participating in KERA Preschool programs are more likely to achieve greater developmental gains than children who were eligible for but did not attend KERA Preschool.

Figure 2 presents a graphic summary of the projected developmental gains of three groups of 1994-1995 KERA preschool participants on the domains of the Battelle Developmental Inventory. The rates of gain for economically at-risk preschoolers are relatively even across domains, though lower in the adaptive and expressive communication domains. Children with developmental delays made the highest rate of gain in the gross motor and personal social domains and children with speech delays made the greatest gains in expressive communication. Thus, it appears that the KERA Preschool Program is particularly effective in helping children improve most in areas in which they most need help.

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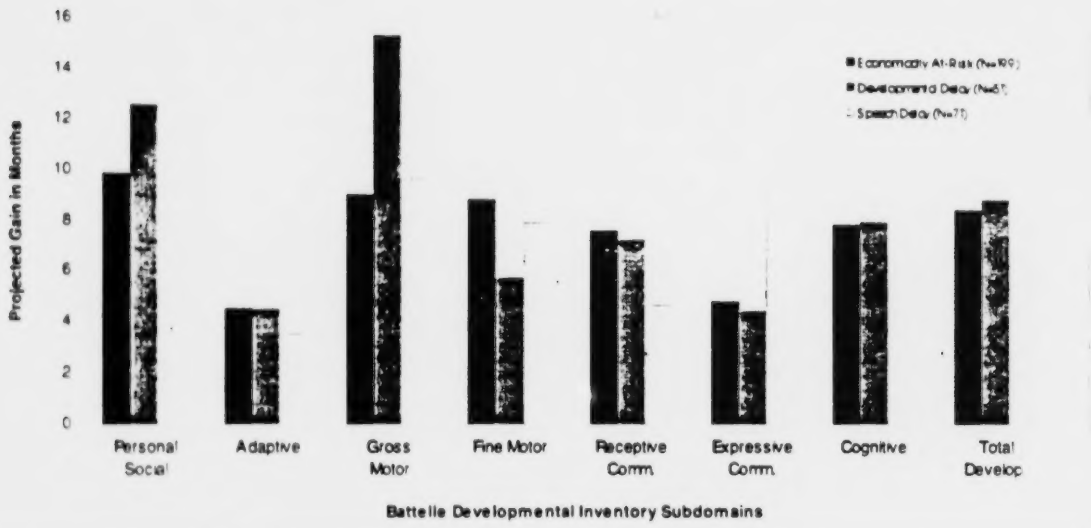
Figure 2
Projected School Year Developmental Gains of Preschoolers with Economic Risk, Developmental Delay, and Speech Delay



Positive gains were observed across all groups of children with disabilities. The changes were most consistent for the children with developmental delays and speech delays as compared to the children with severe disabilities. The low numbers of children with severe disabilities and the lack of a control group limits these findings. However, given that these children had significant delays prior to attending the KERA Preschool Program, the finding that some are gaining one month per month during intervention is important.

Economically at-risk KERA preschool children continue to demonstrate significant gains in the area of social development. Participation in KERA preschool programs, appears to enchance the skills necessary for children's successful functioning in the social world of the classroom. Both parents and teachers note particular improvements in the children's development of self-control. As their social skills develop, the children's problem behaviors are observed less often. Significant gains were also made from pretest to posttest in important early literacy skills.

Four years of follow-up data on former KERA preschool participants indicate that they do as well as or better than their same age classmates on measures of social skills, academic competence, and behavioral adjustment.

However, during their last two years in the primary program, the oldest group of children who were in the KERA Preschool Program during the first year of implementation (1990-1991) have received less favorable ratings on academic and social measures than a comparison group of randomly selected children. Longitudinal research is needed to determine whether this finding represents a fade out effect of the positive effects of preschool participation or simply the fact that the newly implemented program was of lower quality in 1990-1991 than in subsequent years.

As they did in 1993, parents continue to report high levels of satisfaction with the KERA Preschool Programs in terms of the effects of the program on their children's development. They also reported that a variety of activities were available to them and their family and that they availed themselves of a number of these activities when not prevented by scheduling problems or lack of transportation and child care.

Summary

Results indicate that the KERA Preschool Program is achieving the goal of reducing the gap between at-risk children and the rest of the children in their classes. Children in the KERA Preschool Program scored higher than a comparison group of income eligible peers who did not participate in the program on overall development in a variety of cognitive, physical, and social domains and are rated higher by teachers and parents on social skills necessary for success in school.

Results from the last three years reveal that former KERA participants are scoring as well or better than a random sample of their peers on a number of measures of academic progress and expectations for future success in school and life. However, children in the oldest cohort who participated in the KERA Preschool Program during its first year of implementation (1990-1991) are receiving lower ratings on several measures of academic progress and social skills than a random sample of their agemates. Whether this is due to a fade out effect of initial positive results or to the fact that the program was of lower quality during its first year of implementation can only be determined through continued study of the children who have participated in the program during the first five years of implementation.

Introduction to the KERA Preschool Programs

The underlying assumption of the Kentucky Education Reform Act (KERA) is that all students can achieve at high levels and that it is the responsibility of the public schools to ensure that all students have the opportunity to reach high levels and to make progress toward achieving Kentucky's Six Learning Goals:

- Use of basic communication and math skills
- Application of core concepts and principles from mathematics, the sciences, the arts, the humanities, social studies and practical living skills
- Becoming a self-sufficient individual
- Becoming a responsible member of a family work group or community
- Thinking and problem solving
- Connecting and integrating new experiences and knowledge

A Comprehensive Preschool Program

Kentucky's legislators recognized that the best way to enhance children's chances for success in school and their attainment of high levels of achievement is to ensure that they get off to a good start in school. Thus, a tuition-free statewide preschool program was created to help young at-risk children reach their full potential. The KERA Preschool Program is a comprehensive early childhood educational delivery system which provides developmentally appropriate programs for children, integrated services to families, and interdisciplinary and interagency collaboration among organizations serving young children in Kentucky.

Eligibility

KERA was created as a means of equalizing educational opportunities for all children. As a result, the KERA Preschool Program targets four-year-old children from low-income families and three- and four-year-old children with disabilities. Each school district is required to make services available to all eligible children, either through district-provided programs or through contracts with other public or private service provider (KRS 157.3175 and KRS 157.226). Local districts must collaborate with Head Start to maximize use of federal funds available to serve

eligible four-year-old children. The implementation of the KERA Preschool Program was mandatory for all districts beginning in the 1991-1992 school year.

Eligibility for the program is determined in two ways. First, four-year-old children who qualify for free lunch under the national school lunch program are considered at-risk and thus, are eligible for the program. Four-year-old children who are not income eligible may be served as space permits. Second, three and four-year-old children with disabilities who qualify for services under Public Law 99-457 are eligible for the program.

Developmentally Appropriate Programs

The KERA Preschool Program is a developmentally appropriate program which focuses on the physical, intellectual, social and emotional development of young children. In keeping with the guidelines of the National Association for the Education of Young Children (NAEYC), the administrative regulations (704 KAR 3:410) require safe learning environments that: provide for children's active involvement in their own learning; enable each child to progress at his/her own rate; include a meaningful curriculum that is both relevant and concrete; nurture self-respect and foster positive self-esteem; and involve parents and support their efforts to help their children learn. Provisions for meeting children's individual needs are required.

In addition to the provision of a half-day developmentally appropriate educational program, the KERA Preschool Programs provide the following comprehensive services:

- at least one meal and appropriate nutrition information as part of the curriculum;
- complementary parent education, with a minimum of 2 home visits as well as opportunities for other involvement;
- developmental screening (cognitive, communication, adaptive, motor and social-emotional skills);
- coordination with medical, health, mental health and social agencies to meet the comprehensive needs of children and families.

Purposes of the 1994-1995 Program Evaluation of KERA Preschool Programs

The 1994-1995 study of KERA Preschool Programs constitutes the fourth year of the evaluation of the state mandated preschool programs for at-risk four-year-olds and three- and four-year-old children with disabilities. The first major purpose of this phase of the evaluation was to deter-

mine the progress made by current participants in the 1994-1995 KERA Preschool Program, to continue to follow the progress made by previous participants in the first three years of the program (1990-1993), and to compare their progress to a comparison group of their peers who had not attended the KERA Preschool Program. The second major purpose was to assess the extent to which parents were satisfied with the KERA Preschool Programs and their perceptions of the programs' effects on their children and their family.

The specific evaluation questions were:

1. Did KERA preschool participants make developmental gains during attendance in the KERA Preschool Programs in the following areas:
   a. Developmental Skills
   b. Social Skills Related to School Success
   c. Early Literacy Skills

2. How does the performance of the KERA preschool participants compare to the performance of same-age KERA-eligible nonparticipants in the following areas:
   a. Developmental Skills
   b. Social Skills Related to School Success
   c. Early Literacy Skills

3. How do KERA preschool participants perform in later years compared to their same-age classmates in the following areas:
   a. Academic Performance
   b. Expectations for Future Success
   c. Social Skills (Academic Competence and Problem Behavior)
   d. School Attendance
   e. Referrals to Special Services

4. Are parents satisfied with the KERA Preschool Programs and do they think the program has had positive effects on their child's development and on their family?

METHODOLOGY

Sampling Procedure for District Selection

The same school districts that had been used in the previous three years of the evaluation were used for the 1994-1995 evaluation. These districts were identified in the Fall of 1991 using a stratified sampling strategy designed to yield a representative sample of geographic regions (east, west, central), economic development levels (high, low), and program type (district provided versus contracted). A total of 24 districts with district provided programs and 12 districts with contracted programs were identified.

Sampling Procedure for Selection of KERA Preschool Participants (Cohort 5)

The procedure for determining numbers of children within districts was similar to the procedures used during the 1993-1994 evaluation. The number of children selected from a district was based on the number of children who attended KERA Preschool Programs in that district relative to the number of children who attended KERA Preschool Programs in the other districts that were sampled. This provided a sample of children that more closely represents the proportion of children in the total population of KERA preschool children in the state.

This sample of 329 preschool participants was tested along with a comparison group of 53 peers who were eligible for but who had not participated in the program.

Locating a group of children who were eligible for the preschool program but who had not participated has been a difficult problem each year of the evaluation project. The location of and recruitment of a group of comparison children again proved to be difficult due to the limited pool of "unserved" children. This indicates a high level of participation of children in preschool programs that is likely due to good recruitment efforts by the KERA Preschool Programs, Head Start, and additional child care funds becoming available through the Child Care Development and Block Grant and welfare reform with the JOBS Program.

According to a report compiled by the Kentucky Department of Education in June, 1994, the children in the "unserved" category may or may not be unserved since there is a sizable number of low-income children receiving publicly subsidized child care in the private sector.

The KERA Preschool Evaluation Project staff used several means to attempt to locate potential comparison children who were 4 years old by October 1, 1994 and whose parents made $18,000

or less. These attempts involved: 1) contacting the parents of children who had been on last year's list but who had been too young to participate; 2) contacting Head Start Directors and Preschool Coordinators to locate children who had met the financial criteria to attend a KERA Preschool but for one reason or another chose not to participate or dropped out soon after starting in the programs; and 3) contacting Child Care Providers to see if any of their 4-year old children met the eligibility criteria for KERA Preschool but had not attended or had dropped out shortly after starting.

As a result of these efforts parents of 67 children consented to their children's participation in this project. Sixty-seven children were pretested, eight who were attending no program and 59 who were attending a child care program.

The efforts to posttest these 67 children resulted in 53 (82%) of the 67 original children being tested. Fifteen children were not posttested because they had moved and/or could not be located or because they had enrolled in a preschool program since the date of pretesting.

Of the 53 children posttested, 5 (62.5%) of the original 8 nonprogram children and 48 (81%) of the original 59 children from child care centers were tested.

Identifying and Recruiting Comparison Children for Cohorts 1, 2, 3, and 4

Cohort 4 - Primary 1 Children (Kindergartners)

A major attempt had been made in the 1993-1994 evaluation to locate a group of income eligible peers to serve as comparison children for the 1993-1994 KERA preschool participants. As previously pointed out, extensive recruiting efforts resulted in the location of only 65 children whose parents were willing to have them included in the evaluation study. Attempts to locate these same children for the 1994-1995 evaluation yielded only 18 children to serve as an income eligible comparison group.

Additional Primary 1 Comparison Children for Assessment of Adaptive Skills and Behavior Problems

One of the goals of the 1994-1995 KERA Preschool evaluation was to determine primary one (kindergarten) teachers' perceptions of the former KERA preschool participants' adaptive skills and problem behaviors that affect young children's early success in school as compared to a random sample of their peers on the Behavior Assessment System for Teachers - Teacher Rating Scales (BASC). In a desire not to place more demands on teachers who were currently participating in the evaluation study, an attempt was made to locate two other classrooms in the 36

districts that participate in the KERA Preschool evaluation. However, in some smaller districts there were not two other classrooms serving primary one students, so it was necessary to use the same teachers. Two districts refused to participate in this effort. Consequently, 386 BASC forms were sent to the participating teachers in the 34 districts rather than the 415 forms which had been intended for use in the 36 districts. Eventually, 362 forms were returned of which 341 were complete and provided usable data regarding the teachers' perceptions of the primary one students' adaptive skills and problem behaviors. The children who were rated on these 341 forms included 175 former KERA Preschool Economically At-Risk students, 55 former KERA Preschool students with developmental delays, and 111 randomly selected primary one students in the same districts.

Cohort 3 - Primary 2 Children (First Graders)

The 118 comparison children used in the 1992-1993 evaluation of the Cohort 3 children had been selected based on the criteria that they were income eligible for the KERA Preschool Program but for some reason had not attended. They had been recruited from private preschool and child care programs, Head Start waiting lists, and district lists of children who were eligible but voluntarily did not attend the KERA Preschool Programs.

Attempts were made to locate these children and continue to use them as comparison children in the 1993-1994 evaluation of the Cohort 3 children. However, a large number of these children were not enrolled in the schools in the same locations where they had been recruited the previous year. Several had been recruited from Salvation Army day care programs and were from transient families. Only 25 children from the 1992-1993 comparison group were found. It was necessary to recruit new comparison children who were enrolled in the same districts in which the program children were enrolled, so 143 new comparison children were added in 1993-1994. These children represented a variety of income and ability levels, typical of the socioeconomic levels of the school sites used in the evaluation. Attempts were made to locate these same children in 1994-1995 resulting in 158 children in the 1994-1995 comparison group.

Cohort 2 - Primary 3 Children (Second Graders)

The comparison children in Cohort 2 were originally (1992-1993) selected randomly from the same classrooms in which the former KERA preschool participants were enrolled. Most of them were still attending the same schools in 1993-1994, so it was possible to locate 88 of the children from the previous year's comparison group and twenty additional children were added to that group. This comparison group was thus composed of children representing the variety of income and ability levels of the children in those school sites. Attempts to locate these children resulted in a comparison group of 101.

Cohort 1 - Primary 4 Children (Third Graders)

This comparison group was originally composed of students randomly selected from the same classrooms in which the former KERA preschool participants were enrolled in 1992-1993. Only 18 of the same children were located in 1993-1994, so 116 new children were added. These children represented a variety of income and ability levels typical of the children in the school sites in the evaluation project. It was possible to locate 98 of these children to serve as a comparison group in the 1994-1995 evaluation.

Summary of Comparison Children

The comparison children for Cohort 5 (the 1994-1995 KERA preschool group) are income eligible, same-age peers who did not attend the KERA Preschool Program although 91% of them were being served in other childcare centers. Only five had not attended a program or childcare center. The comparison children for Cohorts 1, 2 and 3 represent a variety of income and ability levels typical of the schools that the KERA preschool participants attend. The comparison children for Cohort 4 include two groups: the 18 children who remained from the 1993-1994 income eligible group and a larger group of randomly selected primary one children who served as comparisons on the BASC assessment.

A total of 1148 KERA preschool and 428 comparison children were studied. See Table 1 for the numbers of children in each cohort.

Table 1.
Number of Children Sampled

	Participants	Comparison	Total
Cohort 5 Preschool Total *	329	53	382
(Pretest)	(370)	(68)	(438)
(Posttest)	(333)	(53)	(386)
Cohort 4 Primary 1 (Kindergarten)	221	18	239
Cohort 3 Primary 2 (First Grade)	274	158	432
Cohort 2 Primary 3 (Second Grade)	248	101	349
Cohort 1 Primary 4 (Third Grade)	76	98	174
TOTAL # CHILDREN **	1148	428	1576
TOTAL # RECORDS ***	1522	496	2018

* *Based on # children who took the Battelle Developmental Inventory posttest.*

** *TOTAL # CHILDREN equals the number of different children tested.*

*** *TOTAL # RECORDS equals the number of pretests and posttests administered*

NOTE: Comparison children in Cohorts 4 and 5 were recruited from income eligible children. Comparison children in Cohorts 1,2, and 3 were selected at random from the general population of children in the same classrooms as the former KERA participants..

In terms of demographic characteristics, there were relatively equal percentages of males and females in the various cohorts with 51% of the children in the sample being male and 49% female. Eighty-one percent of the children were white; 16 percent were African-American; 0.4 percent Hispanic; 0.4 percent Asian; and .06 percent unknown.

In terms of eligibility for the program, 1240 of the children were in the financially at-risk category; 195 had speech delays; 126 were developmentally delayed; and 19 had severe disabilities

It was predicted that the KERA preschoolers would outperform other income eligible peers in the comparison group, although approximately 91% of the comparison children attended other preschool and daycare programs which could help equalize achievement of the two groups. When former KERA preschoolers are compared to other randomly sampled typical classmates from a variety of income and ability levels, it would be predicted that they might do less well than a group in which several of the children came from more fortunate economic circumstances. Thus, when results indicate that KERA preschool participants are doing as well as a random sample of their peers, then the KERA Preschool appears to be helping close the gap between them and their classmates. Equalizing educational opportunity by closing that gap is a major goal of KERA and of the KERA Preschool Program in particular.

Assessments Administered to Each Cohort

Table 2 provides a summary the battery of instruments that was administered to each cohort. Throughout this report, the children will be referred to by cohort as specified in Table 2 (e.g., Cohort 1 = 1990-1991 Preschoolers).

Table 2.
Assessments Administered to Each Cohort

	1991-1992 Evaluation	1992-1993 Evaluation	1993-1994 Evaluation	1994-1995 Evaluation
Cohort 1 (1990-1991 Preschoolers)	Battelle Screening Harter Teacher SSRS **Post**	Battelle Screening Harter Teacher SSRS Literacy Sentence Repetition **Post**	Battelle Screening Parent SSRS Teacher SSRS **Post**	Parent SSRS Teacher SSRS Teacher Survey **Post**
Cohort 2 (1991-1992 Preschoolers)	Battelle Screening Harter Teacher SSRS **Post**	Battelle Screening Harter Teacher SSRS Literacy Sentence Repetition **Post**	Full Battelle Parent SSRS Teacher SSRS Literacy **Post**	Parent SSRS Teacher SSRS Teacher Survey **Post**
Cohort 3 (1992-1993 Preschoolers)		Battelle Screening Harter Teacher SSRS Literacy Sentence Repetition **Post**	Battelle Screening Parent SSRS Teacher SSRS Literacy **Post**	Parent SSRS Teacher SSRS Teacher Survey **Post**
Cohort 4 (1993-1994 Preschoolers)			Full Battelle Parent SSRS Teacher SSRS Literacy **Pre and Post**	Parent SSRS Teacher SSRS Teacher Survey BASC - TRS Post
Cohort 5 (1994-1995 Preschoolers)				Full Battelle Parent SSRS Teacher SSRS Literacy **Pre and Post**

During the 1994-1995 evaluation, a battery of tests was administered in the fall (pretest) and spring (posttest) to Cohort 5 (1994-1995 preschoolers). Various measures of children's educational progress were obtained for children in Cohorts 1, 2, 3, and 4.

Developmental Skills Measures

The Battelle Developmental Inventory (BDI) was administered to Cohort 5. The BDI is a standardized, individually administered assessment battery of key developmental skills for children from birth to eight years. It is primarily designed for use by infant, preschool, and primary teachers as well as by special educators. The full BDI consists of 341 test items grouped into the following five domains:

- Personal-Social
- Adaptive
- Motor (Fine and Gross)
- Communication (Receptive and Expressive)
- Cognitive

The Battelle Developmental Inventory is a standardized, individually-administered assessment instrument designed for use with children birth to eight years of age. It is designed to be used by teachers as well as psychologists, clinicians and other related services staff. The BDI consists of 341 test items that are grouped into five domains:

Personal-Social

This domain consists of 85 items that assess abilities and characteristics that allow children to engage in meaningful social interactions. The items measure six specific areas of personal-social development: adult interaction, expression of feelings and affect, self-concept, peer interaction, coping, and social roles.

Adaptive

The adaptive domain consists of 59 items that measure the child's ability to make use of the information and skills that are assessed in the other domains. The adaptive domain addresses two general categories of skills: self-help and task-related skills. These skills include attention, eating, dressing, personal responsibility, and toileting.

Motor Domain

The motor domain includes 82 items that asses the child's ability to control both large (gross motor) and small muscles (fine motor) of the body. The behaviors or skills measured within fine and gross motor are grouped into five subdomains: muscle control, body coordination, locomotion, fine muscle, and perceptual motor.

Communication Domain

The communication domain includes 59 items measuring both receptive and expressive communication skills. In addition, the items in the receptive communication subdomain can be divided into two subgroups: discrimination and meaning. The items in the expressive communication subdomain can be grouped as follows: sounds, grammar-rules and meaning-usage.

Cognitive Domain

The cognitive domain includes 56 items that are grouped into four subdomains: perceptual discrimination, memory, reasoning and academic skills, and conceptual development. Perceptual discrimination skills range from infants' sensorimotor skills to children's ability to discriminate the features of objects and to selectively respond to them. Memory items measure the child's ability to retrieve information when given relevant cues to do so. Reasoning and academic items measure children's critical thinking skills as well as scholastic abilities (e.g., reading, writing, spelling) that are necessary for achievement in school. Finally, conceptual development items measure the child's ability to understand concepts and to draw relationships among objects.

Administration procedures include direct testing, interviews with caregivers and observations of the child in the classroom. Administration time for the full BDI is approximately one to one and a half hours. The BDI has adaptations for children with disabilities such as visual, motor, speech, and multiple disabilities.

During August 1994, 15 testers were trained to administer the Battelle Developmental Inventory and the informal literacy measures. Each tester practiced administering the instruments to three- and four-year-old children, was observed by the project director, and passed a competency checklist before beginning to test children. Checks on interrater reliability revealed an interrater reliability rating of 96.4% with a range of 92.4% to 98.8%. In March 1995 group reliability checks were again conducted with the testers on the Battelle Developmental Inventory. The overall reliability rate was 97% with a range of 94% to 99%.

Early Literacy Measures

Two additional informal measures designed to measure children's knowledge of written language were administered to children. These measures were adaptations of the Letter Identification and Concepts About Print tests in Marie Clay's (1992) diagnostic survey in The Early Detection of Reading Difficulties. The Letter Recognition Test involves asking the children to name and write the upper and lower case letters of the alphabet. The Book Handling Knowledge Test involves

asking the child to point out many aspects of a book such as letters and words, left-to-right, front and back of book, and title and author of book. Each of the literacy measures requires 10 to 15 minutes to administer.

Social Skills Academic Competence and Behavior Measures

A Social Skills Rating System (Gresham & Elliott, 1990) was completed by parents and teachers to assess the impact of the program on the social development of children who had participated in KERA Preschool Programs. The teacher questionnaire asks teachers to compare children to their classmates and to rate them in the areas of Social Skills and Problem Behaviors. At the primary level, teachers are also asked to rate students' Academic Competence. The Parent Questionnaire assesses parents' perceptions of their child's Social Skills and Problem Behaviors.

In addition, the Teacher Rating Scales (TRS), a component of the Behavior Assessment System for Children (Reynolds & Kamphaus, 1992), was used to measure the behavioral adjustment of children as they transitioned into the kindergarten year of the primary program. The TRS is a method for collecting both positive and negative descriptions of children's observable behaviors. The scale is comprehensive in that it assesses both adaptive and problem behaviors within the school and classroom setting. Teachers rate each behavioral description in terms of its frequency of occurrence on a four-point scale, ranging from "Never" to "Almost Always."

Parent Survey

During the 1992-1993 evaluation, a questionnaire was developed as a means of measuring parent satisfaction with the KERA Preschool Programs. In addition, the questionnaire included items related to the types of activities the Preschool Programs offered to parents, the types of activities the parents chose to attend and the barriers that prevented parents from being involved in more activities. During the 1994-1995 evaluation, the research team expanded the questionnaire in order to obtain more information from parents on the quality of the Preschool Programs. The 1994-1995 version of the questionnaire included the same questions on parent involvement activities and barriers to parent involvement but the section on parent satisfaction was expanded. The additional questions addressed such issues as parent involvement in decision making related to their child's education, the extent to which parents felt that their opinions were valued by the school and whether or not parents felt comfortable going to the school or talking with personnel at the school. The expanded version of the questionnaire reflects an attempt to assess parent satisfaction with the overall program including the effects of the program on the child as well as the effects of the program on the family.

Teacher Survey of Academic Performance

To evaluate the academic performance of the children in Cohorts One to Four and their comparisons, a Primary Teacher Survey was developed. Primary teachers were asked to judge the children's academic performance on three sets of items related to the children's attainment of Kentucky's Six Learning goals, their performance in various areas of the primary curriculum (reading, mathematics, writing, social studies, science, art, music, and motor/physical education), and their expectations for the children's future success in progressing to grade four with their peers, graduating from high school, and making a successful transition to college, the workplace, or the military. Teachers were asked to judge whether they felt that the KERA preschool participants and their comparisons were doing as well as, better than, or not as well as the other children in their classes.

STUDENT OUTCOMES

Evaluation Question 1:

> Did KERA preschool participants make gains during attendance in the KERA Preschool Programs in the following areas: developmental skills, social skills related to school success, and early literacy skills?

Program evaluation results that address question one are reported in three separate sections detailing gains in development skills, social skills, and early literacy skills. Within each section the gains for three groups of children are examined: economically at-risk children, children with disabilities, and African-American children. Findings in the area of developmental skills are discussed in terms of actual measured gains and also in terms of projected gains for the school year.

Developmental Skills

In this section the developmental outcomes of children who participated in KERA Preschool Programs are discussed. To determine developmental gains, children's pre- and posttest raw scores obtained with the Battelle Developmental Inventory (BDI) were converted to age equivalent scores. Developmental gains expressed in months for each child were derived from the differences between their pre- and posttest age equivalent scores. These results were averaged and are presented in separate tables for the three groups of KERA preschool participants. The results represent developmental outcomes for preschool program participants during the period

of the evaluation study. To determine what the developmental progress of participants would be for the entire school year, projected developmental gains were calculated based on the rate of gains per month demonstrated during the time between pretest and posttest measurements.

Pretest/Posttest Developmental Gains of Economically At-Risk Preschoolers

The pretest/posttest developmental gains of economically at-risk KERA preschool children are reported for each domain of the BDI in Table 3. With a mean chronological age of 4 years, 5 months at pretesting, KERA at-risk preschoolers demonstrated age equivalent scores as measured with the Battelle Developmental Inventory (BDI) ranging from a low of 3 years-10 months in the subdomain of Receptive Communication to a high of 4 years-9 months in the area of adaptive abilities. With a mean chronological age of 5 years, 0 months at posttesting, the KERA at-risk preschoolers demonstrated age equivalent scores ranging from a low of 4 years, 2 months on the Receptive Communication subdomain to a high of 5 years, 2 months on the Personal Social domain.

Table 3.
Average Developmental Gains for Economically At-Risk Children Participating in KERA Preschool Programs in 1994-1995

Battelle Domain	Pretest (AE) (N=203)		Posttest (AE) (N=201)		Developmental Gain in Months* (N=199)	
	M	SD	M	SD	M	SD
Personal-Social	56.30 (4-8)	11.88	62.02 (5-2)	10.22	5.74	9.29
Adaptive	57.28 (4-9)	9.22	60.04 (5-0)	8.62	2.77	9.18
Motor						
Gross Motor	53.46 (4-5)	10.84	58.83 (4-11)	9.74	5.27	10.38
Fine Motor	46.91 (3-11)	5.90	52.10 (4-4)	6.52	5.22	5.28
Communication						
Receptive	45.62 (3-10)	7.32	49.96 (4-2)	8.68	4.27	8.31
Expressive	49.92 (4-2)	6.75	52.71 (4-5)	6.47	2.85	7.61
Cognitive	47.46 (3-11)	5.59	52.00 (4-4)	6.19	4.64	5.14
Total Development	**52.20 (4-4)**	**6.68**	**57.10 (4-9)**	**5.61**	**4.93**	**5.87**

* *The average time between pre- and posttest is 5.15 months.*
AE = Age Equivalents

The overall results showed that, as a group, economically at-risk KERA preschoolers made developmental gains in all areas as reflected in the average difference between their pretest and posttest age-equivalent scores. Developmental gains in age equivalents ranged from a low of 3 months gain in the Expressive Communication and Adaptive domains to a high of 6 months gain on the Personal-Social domain. The average gain based on the BDI total developmental score was 4.93 months. The 5.0 month increase in the total score represents gains demonstrated during the interval between pretest and posttest, which averaged 5.15 months.

Projected Year-Long Developmental Gains of Economically At-Risk Preschoolers

The rates of developmental gain are expressed in terms of a Program Efficiency Index (PEI), following a method developed to assess the efficiency of early intervention programs (Bagnato & Neisworth, 1980). According to this method, a program efficiency index was calculated first by taking the developmental gain in months and then dividing it by the number of months between the pre- and posttesting. These results represent preschool program outcomes based on the actual time that children participated in the program during the pretest and posttest interval. The PEI is derived from the formula illustrated below:

$$\text{Program Efficiency Index} = \frac{\text{Posttest Developmental Age Equivalent - Pretest Developmental Age Equivalent}}{\text{Posttest Date - Pretest Date}}$$

PEIs were calculated first for each child and then summarized into mean PEIs for each of the three samples of children across all domains. Mean PEI results are included in Table 4. PEI ratios at or near 1.00 reflect an average of one month gain in developmental age-equivalent scores for each month in the KERA Preschool Program and could be considered average or expected gain. Ratios greater than or less than 1.00 would suggest developmental gains that are either above or below the rate assumed to be average development.

Finally, using the PEI ratios, projected developmental gains for the entire school year were calculated. These projected gains were derived by multiplying the PEIs (monthly rates of development between pretest and posttest) by 8.75 months (175 school days is the length of the Preschool year). The results are included in Table 4.

Table 4.
Mean Projected School Year Developmental Gains for Economically At-Risk KERA Preschoolers (N=199)

Battelle Domain	PEI (Gain per Month)	Projected Gain (PEI x 8.75 months)
Personal-Social	1.08	9.43
Adaptive	0.52	4.51
Motor		
Gross Motor	1.02	8.97
Fine Motor	1.00	8.74
Communication		
Receptive	0.87	7.65
Expressive	0.54	4.71
Cognitive	0.88	7.74
Total Development	**.96**	**8.39**

The rates of development as represented by the PEI ratios during the interval between pretest and posttest as well as the projected yearly developmental gains are presented in Table 4 for each domain and for the total development score. Reflecting the positive gains in age equivalent scores discussed previously, all PEIs indicate substantial rates of positive gains per month. The PEI for the total overall development (M=0.96) approaches one month of developmental gain for each month in the program. This rate of developmental progress is notable given that the low socioeconomic status of these children often contributes to lower rates of development. Adjusting for the length of the pre- and posttest interval, the highest rates of development appeared in the Personal-Social (M=1.08), Gross Motor (M=1.02), and Fine Motor (M=1.00) domains. Gross Motor and Personal-Social skills showed the highest rate of gain at slightly more than one month of development per month in program. Children evidenced their slowest rate of developmental gain in the Adaptive domain (M=0.51).

Based on these rates, the average developmental gains projected for the entire school year (8.75 months) ranged from a low of 4.50 months in the area of Adaptive to a high of 9.79 months in the area of Personal-Social Skills. As reflected in their Total Development Score, KERA preschool participants can be expected to achieve approximately eight months of developmental gain during the 8.75 months of the full school year.

Although use of this program evaluation methodology is intended to communicate more easily the relationship of developmental progress with time spent in the program, it should be noted that normal child development is a complex process that is difficult to precisely measure and does not progress in equally prescribed monthly intervals. Also, it should be mentioned that because these children are from low socioeconomic backgrounds their rate of developmental progress when initially entering KERA Preschool Programs may vary considerably from expected norms. Therefore the gains demonstrated by these children suggest an overall positive benefit for program participants.

Pretest/Posttest Developmental Gains of Preschoolers with Disabilities

Three groups of children with disabilities were tested during the 1994-1995 evaluation. This included 51 children identified as developmentally delayed, 71 children identified with speech and language delays, and 5 children with severe disabilities. The procedures used with these children were similar to those described for the children without disabilities. Adaptations were made in the administration of the Battelle Developmental Inventory when it included opportunities for adaptations.

Table 5.
Age Equivalents on Battelle Pre- and Posttest, and Developmental Gains for 1994-1995 KERA Preschoolers With Developmental Delays

Battelle Domain	Pretest (AE) (N=51)		Posttest (AE) (N=51)		Developmental Gain in Months*	
	M	SD	M	SD	M	SD
Personal-Social	45.20 (3-9)	11.82	53.02 (4-5)	12.50	7.22	9.10
Adaptive	48.88 (4-1)	11.09	51.63 (4-4)	11.59	2.54	8.77
Motor						
Gross Motor	42.35 (3-6)	14.80	51.33 (4-3)	13.83	8.76	14.22
Fine Motor	42.24 (3-6)	7.55	45.80 (3-10)	10.03	3.80	8.15
Communication						
Receptive	40.69 (3-4)	9.29	44.94 (3-9)	12.47	4.50	9.81
Expressive	42.06 (3-6)	13.31	45.04 (3-9)	12.28	2.74	9.95
Cognitive	41.14 (3-5)	9.08	45.98 (3-10)	9.91	4.84	6.28
Total	**44.59 (3-9)**	**9.16**	**50.02 (4-2)**	**9.89**	**5.22**	**5.49**

* *The average time between pre- and posttest is 5.28 months.*

***The average age = 59.03 months.*

Table 5 presents the Battelle data for the children with developmental delays. These children made developmental gains in each area of the Battelle. These gains ranged from 2.74 months in expressive communication to 8.76 months in gross motor. In addition, a gain of 5.22 months was observed in total development (a composite score of all domains) during the 5.28 months between pre and post testing for this group of children. The mean chronological age for these children was 53.62 pretest and 59.04 at posttest. The age equivalents at pretest ranged from 3 years 4 months to 4 years 1 month at pretest and 3 years 9 months to 4 years 5 months at posttest. Data on the average gain per month are presented in Table 6. In personal-social, gross motor, and total development, this group of children made gains that averaged more than one month per month in intervention.

Table 6.
PEI and Projected School Year Developmental Gains for 1994-1995 KERA Preschoolers With Developmental Delays

Battelle Domain	PEI (Gain Per Month)		Projected Gain (IEI x 8.75 months)	
	M	SD	M	SD
Personal-Social	1.43	1.96	12.53	17.11
Adaptive	.51	1.77	4.46	15.44
Motor				
Gross Motor	1.75	2.92	15.31	25.59
Fine Motor	.65	1.43	5.72	12.52
Communication				
Receptive	.83	1.84	7.22	16.13
Expressive	.51	1.97	4.43	17.22
Cognitive	.91	1.19	7.93	10.39
Total	**1.01**	**1.08**	**8.80**	**9.45**

*$N=50$.

Table 7 presents the Battelle data for children with speech and language delays. This group of children made developmental gains in each area of the Battelle. These gains ranged from 2.11 months in adaptive skills to 6.31 months in expressive communication. In addition, a gain of 4.49 months was observed in total development (a composite score of all domains). The mean chronological age for these children was 54.35 at pretest and 59.15 at posttest. The age equivalents at pretest ranged from 3 years 5 months to 4 years 5 months at pretest and 3 years 10 months to 4 years 9 months at posttest. The average length of time between pre and post testing for this group of children was 5.08 months. Data on the average gain per month are presented in Table 8. In personal-social, gross motor, and expressive communication, this group of children made gains that averaged more than one month per month in intervention.

Table 7.
Age Equivalent on Battelle Pre- and Posttest, and Developmental Gains for 1994-1995 KERA Preschoolers With Speech Delays

Battelle Domain	Pretest (AE) (N=71)		Posttest (AE) (N=71)		Developmental Gain in Months*	
	M	SD	M	SD	M	SD
Personal-Social	51.41 (4-3)	10.60	56.83 (4-9)	10.45	5.42	10.39
Adaptive	52.77 (4-5)	9.81	54.89 (4-7)	8.90	2.11	8.93
Motor						
Gross Motor	49.73 (4-2)	12.68	55.18 (4-7)	11.52	5.45	12.25
Fine Motor	44.65 (3-9)	7.86	49.42 (4-1)	6.98	4.77	6.67
Communication						
Receptive	42.96 (3-7)	7.85	45.89 (3-10)	8.74	2.93	8.83
Expressive	40.73 (3-5)	8.77	47.04 (3-11)	8.37	6.31	9.46
Cognitive	44.42 (3-8)	5.83	48.80 (4-1)	6.62	4.38	5.94
Total	**48.23 (4-0)**	**6.79**	**52.72 (4-4)**	**6.12**	**4.49**	**5.20**

* *The average time between pre- and posttest is 5.08 months.*

***The average age=59.15 months.*

Table 8.
PEI and Projected School Year Developmental Gains for 1994-1995 KERA Preschoolers With Speech Delays

Battelle Domain	PEI (Gain Per Month) M	PEI (Gain Per Month) SD	Projected Gain (IEI x 8.75 months) M	Projected Gain (IEI x 8.75 months) SD
Personal-Social	1.07	2.12	9.36	18.51
Adaptive	.41	1.79	3.57	15.65
Motor				
Gross Motor	1.10	2.61	9.60	22.81
Fine Motor	.90	1.26	7.91	10.99
Communication				
Receptive	.53	1.77	4.67	15.53
Expressive	1.21	1.88	10.55	16.45
Cognitive	.85	1.22	7.44	10.64
Total	**.84**	**1.11**	**7.36**	**9.74**

*N=71

Projected Year-Long Developmental Gains of Preschoolers with Disabilities

Table 9 presents the Battelle data for the children with severe disabilities. These children made developmental gains in each area of the Battelle. These gains ranged from 1.20 months in expressive communication to 8 months in adaptive skills. In addition, a gain of 2.8 months was observed in total development (a composite score of all domains). The mean chronological age for these children was 52.4 at pretest and 58.00 at posttest. The age equivalents ranged from 1 year to 3 years 2 months at pretest and 1 year 2 months to 3 years 4 months at posttest. The average length of time between pre and post testing for this group of children was 5.64 months. Data on the average gain per month are presented in Table 10. In adaptive skills and receptive communication, this group of children made gains that averaged one month per month in intervention.

Table 9.
Age Equivalent on Battelle Pre- and Posttest, and Developmental Gains for 1994-1995 KERA Preschoolers With Severe Disabilities

Battelle Domain	Pretest (AE) (N=5)		Posttest (AE) (N=5)		Developmental Gain in Months*	
	M	SD	M	SD	M	SD
Personal-Social	37.60 (3-2)	8.96	40.20 (3-4)	15.82	2.60	7.50
Adaptive	20.60 (1-9)	7.13	28.60 (2-5)	16.10	8.00	11.77
Motor						
Gross Motor	11.60 (1-0)	4.56	13.60(1-2)	9.37	2.00	6.20
Fine Motor	27.00 (2-3)	9.25	30.20 (2-6)	9.68	3.20	5.59
Communication						
Receptive	29.40 (2-5)	18.13	34.60 (2-11)	18.60	5.20	11.95
Expressive	32.60 (2-9)	15.84	33.80 (2-10)	21.39	1.20	7.46
Cognitive	27.40 (2-3)	18.26	30.20 (2-6)	12.36	2.80	10.47
Total	**28.20 (2-4)**	**7.29**	**31.00 (2-7)**	**10.37**	**2.80**	**4.44**

** The average time between pre- and posttest is 5.64 months.*

***The average age = 59.03 months.*

Table 10.
PEI and Projected School Year Developmental Gains for 1994-1995 KERA Preschoolers With Severe Disabilities

Battelle Domain	PEI (Gain Per Month)		Projected Gain (IEI x 8.75 months)	
	M	SD	M	SD
Personal-Social	.52	1.52	4.55	13.29
Adaptive	1.55	2.34	13.58	20.46
Motor				
Gross Motor	.31	1.00	2.70	8.76
Fine Motor	.64	1.13	5.59	9.88
Communication				
Receptive	.99	2.18	8.64	19.05
Expressive	.44	1.41	3.88	12.35
Cognitive	.32	2.00	2.78	17.46
Total	**.54**	**.91**	**4.75**	**7.96**

**N=5.*

Pretest/Posttest Developmental Gains of African-American Preschoolers

To ascertain whether the KERA Preschool Program was meeting the needs of African-American participants, analyses were conducted to see if the KERA Preschool Program had the same or differential effects for children of different racial groups. In general, African-American children demonstrated progress in all areas as indicated by their average gains in all domains on the BDI ranging from 5.70 to 3.40 months (see Table 11). Average gains were most noticeable in the Personal-Social (M=5.70) and Gross Motor (M=5.28) domains. African-American children showed the least amount of progress in the Communication-Expressive (M=3.40), Adaptive Skills (M=4.15), and Cognitive Skills (M=4.23) domains. The overall mean gain BDI total score was 5.53 months for African-American children during the average 4.95 months between their pretest and posttest.

Table 11.
Mean PreTest/PostTest Developmental Gains for
Economically At-Risk African-American KERA Preschoolers
N=60

Battelle Domain	Pretest(AE)		Posttest(AE)		Developmental Gain in Months*	
	M	SD	M	SD	M	SD
Personal-Social	55.70 (4-8)	12.07	61.49 (5-1)	10.93	5.70	8.67
Adaptive	57.23 (4-9)	9.51	61.30 (5-1)	8.91	4.15	9.74
Motor						
Gross Motor	56.36 (4-8)	9.85	61.66 (5-2)	8.52	5.28	9.36
Fine Motor	46.28 (3-10)	4.70	50.98 (4-3)	5.38	4.75	4.28
Communication						
Receptive	43.79 (3-8)	7.06	48.49 (4-0)	10.56	4.75	9.12
Expressive	48.20 (4-0)	7.07	51.74 (4-4)	6.66	3.40	8.80
Cognitive	46.72 (3-11)	5.25	51.02 (4-3)	6.20	4.23	4.78
Total Score	**51.11 (4-3)**	**8.50**	**56.67 (4-9)**	**4.96**	**5.53**	**7.90**

* *The average time between pre- and posttest for this group is 4.95 months.*

Projected Year-Long Developmental Gains for African-American Preschoolers

As demonstrated by the mean PEIs in Table 12, African-American children gained an average of 1.13 months in total BDI developmental age equivalents for each month of participation in the KERA Preschool Program. African-American children demonstrated their highest rates of development in Personal-Social Skills (M=1.17), Gross Motor (M=1.02), and Fine Motor Skills (M=0.97) domains. Rate of progress was less in the Adaptive domain (M=0.83) and in areas involving Cognitive (M=0.84) and Expressive Communication (M=0.67) skills.

Table 12.
Mean Projected School Year Developmental Gains for Economically At-Risk African-American KERA Preschoolers
N=60

Battelle Domain	PEI (Gain Per Month)	Projected Gain (PEI x 8.75 months)
Personal-Social	1.17	10.27
Adaptive	.83	7.24
Motor		
Gross Motor	1.02	8.96
Fine Motor	.97	8.46
Communication		
Receptive	.96	8.41
Expressive	.67	5.90
Cognitive	.84	7.32
Total Score	**1.13**	**9.85**

These PEIs were translated into projected developmental gains for a full school year (8.75 months), resulting in a projected average gain of 9.85 months on the total Battelle score. The greatest months of projected developmental gains were in the Personal-Social (M=10.27) and Gross Motor (M=8.96) domains.

To determine whether there were differential program effects for African-American children and other children, the developmental levels of both groups of students when they began the pre-school program were considered. What differences existed upon entry? In terms of their pretest age equivalent scores on the Battelle Developmental Inventory, white students entered preschool with significantly higher scores in the Expressive Communication and Receptive Communica-

tion subdomains, while African-American students scored significantly higher on the Gross Motor subdomain. On the posttest, the African-American children scored significantly higher than the White children in Gross Motor skills (Table 13). In all other domains, there were no significant differences between posttest scores between African-American and White children.

Table 13.
Mean Scores on the Battelle Developmental Inventory for African-American and White Preschool Economically At-Risk Children

Battelle Domain	PRETEST		POSTTEST	
	African-American (N=61)	White (N=136)	African-American (N=61)	White (N=134)
Personal Social	55.70	56.82	61.49	62.51
Adaptive	57.23	57.55	61.30	59.75
Motor				
Gross Motor	56.36*	52.11	61.66**	57.64
Fine Motor	46.28	47.29	50.98	52.73
Communication				
Receptive Communication	43.79	46.76**	48.49	50.65
Expressive Communication	48.20	50.85*	51.74	53.27
Cognitive	46.72	47.96	51.02	52.61
BDI Total Score	**51.11**	**52.86**	**56.67**	**57.46**

* $p<.05$.
** $p<.01$.

Were the rates of gains and projected developmental gains similar for these two groups? Based on a comparison of their PEIs included in Table 14, the monthly rates of developmental progress according to their total Battelle scores during program participation for African-American children was $\underline{M}$=1.13 and for White preschool children was $\underline{M}$=0.88. Although the monthly rate of gain was higher for African-American children, comparison analysis showed the difference to be too small to be statistically significant. When these PEIs were used to project the gains that the children would make in a full school year, the African-American children would make an average of 9.85 months gain and the White children would make an average of 7.70 months gain on the total Battelle. Again, this Battelle total score projected difference of about two months over

the course of the school year was not statistically significant. It does indicate, however, that the KERA Preschool Program is meeting the needs of African-American children as well as those of White children.

Table 14.
Program Efficiency Index (PEI) Scores for African-American and White Economically At-Risk Preschool Children

Battelle Domains	PEI		Projected Gains	
	African-American (N=60)	White (N=133)	African-American (N=60)	White (N=133)
Personal Social	1.17	1.09	10.27	9.55
Adaptive	.83	.38	7.24	3.34
Motor				
Gross Motor	1.02	1.05	8.96	9.23
Fine Motor	.97	1.02	8.46	8.96
Communication				
Receptive Communication	.96	.76	8.41	6.63
Expressive Communication	.67	.48	5.90	4.17
Cognitive	.84	.91	7.32	7.95
BDI total score	**1.13**	**.88**	**9.85**	**7.70**

Note: No Significant Differences were found.

Social Skills

The responses from Social Skills Rating Scale completed by teachers and parents were converted into standard scores using age-based norms (Mean = 100, Standard Deviation = 15). For the cohort of preschool children, standard score means and standard deviations were calculated from both teacher and parent questionnaires and the results, expressed in terms of a total social skills score and a problem behaviors total score. A lower score on the problem behavior scale indicates fewer behavioral problems as observed by a child's teacher or parent.

Pretest/Posttest Social Skills Gains for Economically At-Risk Preschoolers

The overall results for preschool children presented in Table 15 show that the social skills of KERA preschool children compare favorably with the social skills of a national sample of preschool children of similar age. Analyses revealed statistically significant gain from their mean pretest total score of 103.83 to their mean posttest total score of 110.42 in the area of social skills

as rated by both their teachers ($p<.001$) and their parents ($p<.01$). Teachers and parents also indicated that problem behaviors decreased during this time, with parents' ratings of problem behaviors declining significantly from 105.72 at pretest to 101.29 at posttest ($p<.02$).

Table 15.
Means and Standard Deviations for Social Skills and Problem Behavior Ratings by Teachers and Parents for Economically At-Risk KERA Preschoolers

		Pretest	Posttest	Significance
Social Skills				
Teacher	M	103.83	110.42	.001
	SD	(15.13)	(13.52)	
	N	205	205	
Parent	M	96.37	101.33	.01
	SD	(14.35)	(13.60)	
	N	106	108	
Problem Behavior				
Teacher	M	99.32	97.46*	.14
	SD	(13.03)	(12.43)	
	N	205	205	
Parent	M	105.72	101.29*	.02
	SD	(13.94)	(13.36)	
	N	106	108	

* *A lower score is desirable in Problem Behavior.*

Further analyses were conducted to determine the specific areas of social skills improvement. Results showed significant improvements in total social skills ($p<.01$), specifically in the positive use of assertive behavior ($p<.001$) during social interactions, and in the use of self-control ($p<.001$). Results in the specific areas of cooperation, assertion, and self-control are reported in Table 16 in terms of the percentages of economically at-risk preschool children who were rated as having "fewer than average" social skills, "average" social skills, or "more than average" social skills. Approximately one out of ten students entering KERA preschool programs exhibited "fewer than average" social skills than developmentally expected for their age. However, upon completion of the program more than a third of the at-risk children were rated by their teachers as having increased their social skills to the "more than average" level (an estimated 14% improvement).

Table 16.
Percentage of SSRS Subscales Rated by Teachers As Being Fewer Than Average, Average, or More Than Average for Economically At-Risk Preschoolers, 1994-95

Subscale	Pretest (%) (N=205)	Posttest (%) (N=205)
Cooperation		
Fewer	11	7
Average	74	71
More	15	22
Assertion***		
Fewer	12	5
Average	71	63
More	18	32
Self-Control***		
Fewer	12	6
Average	64	63
More	23	31
Social Skills Total**		
Fewer	**11**	**5**
Average	**65**	**57**
More	**24**	**38**
Problem Behaviors Total		
Fewer	**25**	**32**
Average	**66**	**61**
More	**9**	**6**

** *Indicates significant improvement at $p < .01$, when analyzed with chi².*
*** *Indicates significant improvement at $p < .001$, when analyzed with chi².*

Generally, KERA preschoolers were rated by teachers as exhibiting problem behaviors within the expected range for their developmental levels. Teachers rated only 9% of the KERA Preschoolers as having behavioral problems exceeding the average child in both number and severity at pretest. Overall, there was little change in the number and severity of problem behaviors as a result of KERA preschool participation between pretest and posttest. At posttest, teacher ratings indicated that 32% of the children had "fewer than average" problems (a seven percent improvement), 61% showed an Average number of problem behaviors (a five percent improvement), and six percent experienced "more than average" behavioral difficulties (a three percent improvement).

Similar improvements were noted in the parent ratings of social skills and problem behaviors. Consistent with teachers, parent ratings presented in Table 17 also showed significant gains for children in self control ($p<.05$) and social skills total ($p<.01$). Problem behavior ratings decreased but not significantly, with a six percent decline in the number of children rated by parents as having a "more than average" level of problem behaviors.

Table 17.
Percentage of SSRS Subscales Rated by Parent As Being Fewer Than Average, Average, or More Than Average for Economically At-Risk Preschoolers, 1994-95

Subscale	Pretest (%) (N=107)	Posttest (%) (N=109)
Cooperation		
Fewer	20	15
Average	72	75
More	8	10
Assertion		
Fewer	18	12
Average	73	79
More	9	9
Self-Control*		
Fewer	23	10
Average	70	79
More	7	11
Social Skills Total**		
Fewer	**24**	**11**
Average	**67**	**71**
More	**8**	**18**
Problem Behaviors Total		
Fewer	**9**	**13**
Average	**70**	**73**
More	**21**	**15**

* *Indicates significant improvement at $p < .05$, when analyzed with chi².*
** *Indicates significant improvement at $p < .01$, when analyzed with chi².*

Pretest/Posttest Social Skills Gains for Preschoolers with Disabilities

Social Skills Rating Scale were sent to the parents and teachers of all of the children with disabilities who were tested. Social skills data for the children with developmental delays are included in Table 18. For the children with developmental delays, 52 teachers returned the SSRSs at both pre and posttest, 24 parents returned the SSRSs at pretest, and 20 parents returned the SSRSs at posttest. Both the teachers and the parents rated the children's social skills higher at posttest than at pretest. However, the difference between ratings at pre and posttesting were

significant only for the teachers. The teachers rated the children's social skills higher than the parents did at both pre and posttesting. In terms of problem behaviors, the teachers and parents rated the children as having fewer behavior problems at posttesting than at pretesting. Again, only the teachers' ratings were significant. The teacher and parent ratings were quite similar both at pre and posttesting.

Table 18.
Means and Standard Deviations of Social Skills and Problem Behavior Rated in Pre- and Posttest by Teacher and Parent for 1994-1995 KERA Preschoolers with Developmental Delays

Ratings		Pretest	Posttest	p
Social Skills				
Teacher	M	92.79	100.98	.01
	SD	14.51	15.71	
	N	52	52	
Parent	M	85.83	86.70	.88
	SD	13.94	24.59	
	M	24	20	
Problem Behavior				
Teacher	M	106.33	101.06	.05
	SD	13.42	13.38	
	N	52	52	
Parent	M	109.63	99.60	.23
	SD	14.87	28.31	
	N	24	20	

Social skills data for the children with speech and language delays are included in Table 19. For the children with speech and language delays, 71 teachers returned the SSRSs at both pre and posttest, 39 parents returned the SSRSs at pretest, and 37 parents returned the SSRSs at posttest. Both the teachers and the parents rated the children's social skills higher at posttest than at pretest. Again, the difference between ratings at pre and posttesting were significant only for the teachers. The teachers rated the children's social skills slightly higher than the parents did at both pre and posttesting. In terms of problem behaviors, the teachers and parents rated the children as having more behavior problems at posttesting than at pretesting. However the differences were minimal and were not significantly significant. The parent and teacher ratings of children's behavior problems were similar at both pre and posttesting.

Table 19.
Means and Standard Deviations of Social Skills and Problem Behavior Rated in Pre- and Posttest by Teachers and Parents for 1994-1995 KERA Preschoolers with Speech Delays

Ratings		Pretest	Posttest	p
Social Skills				
Teacher	M	97.77	103.62	.01
	SD	13.74	13.77	
	N	71		
Parent	M	94.26	97.05	.42
	SD	16.03	17.60	
	M	39	37	
Problem Behavior				
Teacher	M	103.92	104.06	.95
	SD	13.31	14.90	
	N	71	71	
Parent	M	102.85	104.84	.55
	SD	14.15	15.06	
	N	39	37	

Social skills data for the children with severe disabilities are included in Table 20. For the children with severe disabilities, 5 teachers returned the SSRSs at both pre and posttest, and only 1 parent returned the SSRS at pre and posttesting. Both the teachers and the parents rated the children's social skills higher at posttest than at pretest, but the differences were not significant. In terms of problem behaviors, the teachers and parents rated the children as having fewer behavior problems at posttesting than at pretesting. Again, the differences were not statistically significant. The parent and teacher ratings of children's social skills and behavior problems were similar at both pre and posttesting.

Table 20.
Means and Standard Deviations of Social Skills and Problem Behavior Rated in Pre- and Posttest by Teacher and Parent for 1994-1995 KERA Preschoolers with Severe Disabilities

Ratings		Pretest	Posttest	p
Social Skills				
Teacher	M	82.00	90.80	.24
	SD	8.49	13.08	
	N	5	5	
Parent	M	81.00	91.00	--
	SD	--	--	
	M	16	18	
Problem Behavior				
Teacher	M	107.60	106.80	.90
	SD	11.17	11.17	
	N	5	5	
Parent	M	126.00	121.00	
	SD	--	--	
	N	1	1	

Pretest/Posttest Social Skills Gains for African-American Preschoolers

The social skills gains for African-American children attending KERA preschools were determined by comparing the mean social skills and problem behavior scores at pretest with their posttest scores. The results reported in Table 21 show that the mean teacher ratings of African-American children indicate average social skills overall when compared to peers in a national norm group ($M = 100$, $SD = 15$). Similarly, teacher ratings for problem behaviors also were within the average range.

Table 21.
Means and Standard Deviations for Teacher and Parent Social Skills and Problem Behavior Ratings at Pretest and Posttest for African-American and White Economically At-Risk Preschoolers

		African-American			White		
		Pretest	Posttest	p	Pretest	Posttest	p
Social Skills							
Teacher	M	104.02	109.52	.03	103.70	111.07	.00
	N	62	62		137	137	
Parent	M	07.10	102.71	.10	96.17	101.14	.02
	N	20	21		84	84	
Problem Behavior							
Teacher	M	99.02	100.19	.63	99.31	96.28	.04
	N	62	62		137	137	
Parent	M	106.05	99.10	.10	105.48	101.72	.10
	N	20	21		84	86	

A comparison of pretest with posttest scores resulted in statistically significant positive gains for African-American children in the area of social skills as rated by teachers ($p < .03$). Teacher ratings of average problem behaviors remained relatively unchanged from pretest to posttest. Parent ratings also showed increases in social skills and decreases in problem behaviors, but the improvements rated by parents were not as significant ($p < .10$).

These trends are consistent with the previous 1993-94 evaluation findings and in combination with the teacher ratings suggest that KERA preschools have real impact on the development of social skills related to school success for African-American children. Moreover, the consistent similarity between these social skills outcomes over the last two years and the gains of both African-American and White children suggest that the overall benefits in the area of social development appear to be equally positive for all children participating in KERA preschools, regardless of racial or ethnic background.

Early Literacy Skills

Pretest/Posttest Early Literacy Skills of Economically At-Risk Preschoolers

The preschoolers' scores on the Letter Recognition Test indicated that the children made significant gains in their knowledge of the alphabet between their pre- and posttests. Their scores indicated significant improvement in their ability to recognize upper and lower case letters and in their ability to write the upper and lower case letters. The percentage of children who could recognize their names increased from 60 percent to 80 percent between pre- and posttest.

Students also made statistically significant gains from pretest to posttest on the Book Handling Knowledge Test, indicating increased understanding of the print concepts that are necessary prerequisites for learning to read.

Table 22.
Means and Standard Deviations for Pretest and Posttest Scores of Economically At-Risk Preschoolers on the Early Literacy Measures

Letter Recognition Test:		Pretest (n=205)	Posttest (n=200)	Level of Significance
Recognizes Upper Case Letters	M	4.14	11.05	.000
	SD	(6.78)	(9.21)	
Recognizes Lower Case Letters	M	2.31	7.34	.000
	SD	(5.03)	(8.06)	
Total Letter Recognition	M	6.54	18.46	.000
	SD	(11.55)	(16.87)	
Writes Upper Case Letters	M	0.77	3.88	.000
	SD	(2.90)	(6.55)	
Writes Lower Case Letters	M	0.18	0.90	.000
	SD	(1.20)	(2.49)	
Total Letter Writing	M	0.90	4.82	.000
	SD	(3.70)	(8.59)	
Total Letter Recognition Score	**M**	**8.30**	**24.79**	**.000**
	SD	**(14.78)**	**(24.62)**	

Table 22 (con't.)

Book Handling Test:		Pretest	Posttest	Level of Significance
Total Score	M	8.61	10.26	.000
	SD	(3.50)	(3.58)	

Pretest/Posttest Early Literacy Skills of African-American Economically At-Risk Preschoolers

African-American children made significant gains in their knowledge of the alphabet between pre- and posttests. Their scores indicate a statistically significant improvement in their ability to recognize both upper and lower case letters and in their ability to write upper case letters. Their ability to write lower case letters improved, but not significantly.

The percentage of children who could recognize their own names increased from 47 percent to 79 percent, equalling the performance of their White counterparts on the posttest even though they had trailed in this ability at the time of pretesting.

The African-American children's scores on the Book Handing Test also showed significant improvement between pretest and posttest, indicating increased knowledge of the print concepts that are necessary prerequisites for learning to read.

Table 23.
Means and Standard Deviations for Pretest and Posttest Scores of African-American At-Risk Preschoolers on the Early Literacy Measures

Letter Recognition Test:

		Pretest (n=62)	Posttest (n=60)	Level of Significance
Recognizes Upper Case Letters	M	3.69	10.92	.000
	SD	(6.73)	(8.82)	
Recognizes Lower Case Letters	M	1.92	6.88	.000
	SD	(4.61)	(7.62)	
Total Letter Recognition	M	5.89	17.80	.000
	SD	(11.12)	(15.93)	
Writes Upper Case Letters	M	0.81	2.88	.011
	SD	(2.86)	(5.59)	
Writes Lower Case Letters	M	0.26	0.45	.507
	SD	(1.52)	(1.66)	
Total Letter Writing	M	0.92	3.50	.012
	SD	(3.77)	(7.03)	
Total Letter Recognition Scores	**M**	**7.26**	**22.68**	**.000**
	SD	**(14.32)**	**(22.17)**	

Book Handling Test:

		Pretest (n=35)	Posttest (n=38)	Level of Significance
Total Score	M	7.52	9.77	.001
	SD	(3.44)	(4.14)	

Evaluation Questions 2:

How does the performance of KERA preschool participants compare to the performance of same age KERA eligible nonparticipants in the following areas: developmental skills, social skills related to school success, and early literacy skills?

Developmental Skills of Economically At-Risk KERA Preschoolers and Comparison Children

To provide information on the extent to which the developmental gains of KERA preschool children are attributable to program participation versus typical child growth and development associated with the passage of time, comparisons were made between children in KERA preschools and a similar group of children who were eligible for but who did not participate in KERA preschool programs. The comparison group (n=97) consisted of a combined group of children from 1993-94 (n=44) and 1994-95 (n=53) &who were eligible for but who did not attend a KERA preschool. Children from this year and last year's comparison groups were combined because of low numbers in previous evaluations. A larger comparison group enhances the confidence in the results of statistical analyses.

As reported for the initial evaluation question, the results are discussed in terms of gains projected for the entire school year based on the Program Efficiency Index, which takes into account the amount of gain per month of program enrollment between pretesting and posttesting (Table 24). Numbers in the PEI column represent the average rates of developmental gain per month for KERA and comparison preschool children. In the next column, these rates are transformed into projected gains estimated for the school year. The "difference in gains" between KERA and comparison children is reported in the third column. The results show that KERA preschool participants demonstrated greater developmental gains than comparison group children in all of the 10 areas measured: Personal-Social, Adaptive, Gross Motor, Fine Motor, Receptive Communication, Expressive Communication, and Total Development.

Table 24.
Mean PEIs and Projected School Year Developmental Gains for Economically At-Risk KERA Preschoolers and Comparison Children

Participants: N=199-205 Ave. Mos. Pre-Post=5.15 Comparisons: N=89-98 Ave. Mos. Pre-Post=5.48	PEI ***	8.75 Month School Year Projected Gains	Difference in Gains	Significance Levels
Personal-Social				
Participants *	1.08	9.43	+2.47	0.24
Comparisons *	0.84	6.96		
Adaptive				
Participants	0.52	4.51	+1.94	0.40
Comparisons	0.26	2.57		
Motor				
Gross Motor				
Participants	1.02	8.97	+0.95	0.70
Comparisons	0.86	8.02		
Fine Motor				
Participants	1.00	8.74	+5.26	0.00
Comparisons	0.42	3.48		
Communication				
Receptive Comm.				
Participants	0.87	7.65	+1.25	0.58
Comparisons	0.80	6.40		
Expressive Comm.				
Participants	0.54	4.71	+1.78	0.30
Comparisons	0.37	2.93		
Cognitive				
Participants	0.88	7.74	+1.07	0.38
Comparisons	0.80	6.67		
Total Development				
Participants	**0.96**	**8.39**	**+4.16**	**0.00**
Comparisons	**0.51**	**4.23**		

* *Mean age for both groups at posttest was 59.60 for KERA children and 59.04 for Comparison children.*

*** *PEI = Program Efficiency Index - Developmental gain in months divided by months in program/or between pre-post testing. PEI calculated using actual gains in month without rounding.*

The Program Efficiency Index (PEI) ratios and projected yearly gains presented in Table 24 indicate that the rate of overall Total Development of KERA preschool participants is approximately twice that of eligible nonparticipants. Statistically significant differences favoring KERA preschoolers occurred in Fine Motor ($p < .00$) and the Total Development score

($p < .00$). These differences suggest that KERA Preschool Programs contribute significantly to the overall development of participating children, with larger gains specifically in the motor and fine muscle skills contributing to the eye-hand coordination needed for success in early school tasks, such as writing, coloring, cutting, pasting, etc. Domains where KERA preschoolers showed larger gains approaching statistical significance were in important areas such as Personal-Social, Expressive Communication, and Cognitive Development. Such results provide early indications that the benefits to program participants are evident in areas associated with later school achievement.

In summary, these findings are consistent with previous evaluation trends and indicate that children participating in KERA preschool programs are more likely to achieve greater developmental gains than children who were eligible for but did not attend KERA preschool. Although developmental differences are not statistically significant across all domains, the findings show a promising trend of improvement with each new cohort of preschoolers. The results again suggest that such developmental gains are an effective early intervention for reducing the likelihood of subsequent academic failure and social difficulties for which these children are at-risk.

Developmental Skills of Economically At-Risk African-American Participants and Comparisons

Differences between African-American children who participated in KERA preschool programs and those who did not were calculated by comparing PEI scores and the yearly projected gains for these two groups. The rates of gain per month and the projected gains for the year are reported in Table 25 for the 60 African American KERA preschool children and the 40 African American children who were eligible but did not participate in KERA preschools.

Table 25.
Mean PEIs and Projected School Year Developmental Gains for KERA Economically At-Risk African-American Preschoolers and African-American Comparisons Children, 1994-95

Participants: N=60 Ave. Mos. Pre-Post=4.95 Comparisons: N=40 Ave. Mos. Pre-Post=5.55	PEI	Projected Gains (PEI x8.75 months)	Difference in Gains	Significance
Personal-Social				
Participants	1.14	9.95	+4.97	0.15
Comparisons	0.62	4.98		
Adaptive				
Participants	0.81	7.12	+7.92	0.07
Comparisons (N=38)*	0.00	-0.80		
Motor				
Gross Motor				
Participants	1.02	8.96	-0.69	0.87
Comparisons	0.96	9.65		
Fine Motor				
Participants	0.97	8.46	+5.53	0.00
Comparisons	0.46	2.93		
Communication				
Receptive Communication				
Participants	0.94	8.22	+7.51	0.04
Comparisons	0.22	0.71		
Expressive Communication				
Participants	0.63	5.50	+3.87	0.19
Comparisons	0.14	1.63		
Cognitive				
Participants	0.84	7.32	+2.48	0.21
Comparisons (N=39)*	0.59	4.84		
Total Development				
Participants	**1.13**	**9.85**	**+6.61**	**0.02**
Comparisons (N=37)*	**0.41**	**3.24**		

**Lower number indicates missing or incomplete data.*

Overall, total developmental gains were significantly greater for KERA preschool participants than for children in the comparison group ($p < .02$). Projected gains for participants ($M = 9.85$) were more than six months greater than the comparisons ($M = 3.24$). KERA participants also demonstrated statistically larger gains in the specific domains of Fine Motor ($p < .00$) and Receptive Communication ($p < .04$). Participants made notable progress in Adaptive Behavior, Per-

sonal-Social, and Expressive Communication domains, where large differences were approaching statistical significance. These results support the short-term effectiveness of early intervention through KERA preschool for low income African American children who may be at-risk for later academic and developmental difficulties in school.

Social Skills of Economically At-Risk KERA Preschoolers and Comparison Children (Cohort 5)

When the posttest social skills scores of KERA preschoolers were compared to income-eligible children who did not participate in a KERA preschool, results indicated that KERA preschoolers were rated as being more socially skilled by both teachers and parents (See Table 26). When problem behavior ratings were compared to income-eligible children who did not participate in a KERA Preschool Program, results indicated that KERA preschool children demonstrated significantly fewer problem behaviors.

Table 26.
Comparison of Teacher and Parent Mean Social Skills and Problem Behaviors Ratings for Cohort 5 of KERA Preschoolers and Comparison Children

		Participants Posttest		Comparisons Posttest	p
Social Skills					
Teacher	M	110.42	>	99.35	.00
	N	205		94	
Parent	M	101.62	>	96.66	.04
	N	110		47	
Problem Behavior**					
Teacher	M	97.46	<	105.48	.00
	N	205		95	
Parent	M	101.50		104.18	.25
	N	111		45	

** *A lower score is desirable for Problem Behavior.*

Early Literacy Skills of Economically At-Risk KERA Preschoolers and Comparison Children (Cohort 5)

The results of the Letter Recognition Test appear in Table 27. The children who participated in the KERA Preschool Program knew an average of 18 letters at the time of the posttest; whereas, the comparison children recognized a mean of 16 letters. Although KERA participants knew more letters, the advantage in favor of the KERA participants did not reach statistical significance. The children's scores indicate that there were no statistically significant differences at the time of posttesting between the scores of the KERA participants and the comparison children in terms of their ability to recognize the upper and lower case letters of the alphabet. The comparison children scored significantly higher in their ability to write the lower case letters but not in overall letter writing ability. The percentage of children who could recognize and write their own names was higher for KERA Preschool participants buts did not quite reach significance (See Table 28).

Table 27.
Means and Standard Deviations for Early Literacy Posttests for Economically At-Risk KERA Preschoolers and Comparison Children

Letter Recognition Test:		Participants (N=200)	Comparisons (N=53)	p
Recognizes Upper Case Letters	M	11.05	9.92	0.11
	SD	(9.21)	(9.20)	
Recognizes Lower Case Letters	M	7.34	6.06	0.58
	SD	(8.06)	(7.74)	
Total Letter Recognition	M	18.46	15.98	0.81
	SD	(16.87)	(16.57)	
Writes Upper Case Letters	M	3.88	3.72	0.11
	SD	(6.55)	(6.99)	
Writes Lower Case Letters	M	0.90	1.77	0.01*
	SD	(2.49)	(5.42)	
Total Letter Writing	M	4.82	5.49	0.07
	SD	(8.59)	(11.96)	
Total Letter Recognition Score	M	**24.79**	**22.53**	**0.46**
	SD	**(24.62)**	**(27.15)**	

Table 27 (con't).

Book Handling Test:		Participants	Comparisons	p
Total Score	M	10.26	9.53	0.38
	SD	(3.58)	(3.83)	

**p<.01

Table 28
Percentage of Economically At-Risk KERA Preschoolers Who Could Recognize and Write Their Own Names

	Participants (N=205)	Comparisons (N=53)	p
Recognize Own Name	77.1%	60.4%	.056
Write Own Name	38.5%	26.4%	.078

There was no significant difference between the two groups in Total Letter Recognition scores. The results for the Book Handling Knowledge Test also appear in Table 29. As in the case of the Letter Recognition Test, there is no significant difference between the knowledge of print concepts of the KERA participants and the comparison children.

The African-American children's patterns of scores on the early literacy tests are similar to those of the total group of at-risk preschoolers. There were no significant differences between the KERA participants and the comparison children in their scores in name recognition, name writing, letter recognition, letter writing, and knowledge of print concepts.

Table 29.
Means and Standard Deviations for Early Literacy Posttests for Economically At-Risk KERA African-American Preschoolers and Comparison Children

Letter Recognition Test:		Participants (N=60)	Comparisons (N=22)	p
Recognizes Upper Case Letters	M	10.92	9.41	0.39
	SD	(8.82)	(8.94)	
Recognizes Lower Case Letters	M	6.88	5.55	0.86
	SD	(7.62)	(6.36)	
Total Letter Recognition	M	17.80	14.95	0.92
	SD	(15.93)	(15.09)	
Writes Upper Case Letters	M	2.88	3.18	0.22
	SD	(5.59)	(5.84)	
Writes Lower Case Letters	M	0.45	0.64	0.14
	SD	(1.66)	(2.56)	
Total Letter Writing	M	3.50	3.82	0.31
	SD	(7.03)	(7.93)	
Total Letter Recognition Score	**M**	**22.68**	**19.64**	**0.83**
	SD	**(22.17)**	**(22.29)**	

Book Handling Test:		Participants	Comparisons	p
Total Score	M	9.77	8.59	0.17
	SD	(4.14)	(3.33)	

*p>.05

Table 30.
Percentage of African-American Economically At-Risk KERA Preschoolers Who Could Recognize and Write Their Own Names

	Participants (N=62)	Comparisons (N=22)	p
Recognize Own Name	75.8%	54.5%	.256
Write Own Name	24.2%	22.7%	.942

Evaluation Question 3.

How do KERA preschool participants perform in later years compared to their same-age classmates in the following areas:

a. Academic Performance
b. Expectations for Future Success
c. Social Skills (Academic Competence and Problem Behavior)
d. School Attendance
e. Referrals to Special Services

Academic Performance and Expectations for Future Success

To determine how well former KERA participants were achieving in the primary program, teachers were asked to complete the Primary Teacher Survey on which they rated the children in three major areas: attainment of Kentucky's Learning Goals, performance in various areas of the primary curriculum, and expectations for future success. Teachers were asked to judge whether the children were doing better than most of the children in their classes, the same as most of the children, or not as well as most of the children.

Teachers' Ratings of Primary 1 (Kindergarten) Students' Academic Progress and Expectations for Future Success

The results of the teachers' ratings of the Primary 1 children's academic progress are presented in Table 31. Only the ratings of the former KERA participants will be presented since the number of children in the comparison group was too small to make valid comparisons.

Table 31.
Percentage of KERA Primary 1 (Kindergarten) At-Risk Children Rated by Teachers to be Doing Better, the Same, or Not as Well as Most of the Children in Their Classes

PRIMARY TEACHER SURVEY	Better	The Same	Not as Well	Missing
Learning Goals				
Using basic communication & math skills	27.9	46.8	18.2	7.1
Applying core concepts & principles	24.0	48.7	20.1	7.1
Becoming self-sufficient	31.8	46.1	14.9	7.1
Being a responsible group member	29.2	42.2	21.4	7.1
Thinking and solving problems	24.0	44.2	24.7	7.1
Integrating new knowledge & past learning	24.7	45.5	22.1	7.8
Performance in Primary Curriculum				
Reading	21.4	46.1	23.4	9.1
Mathematics	26.0	46.1	19.5	8.4
Writing	18.2	45.6	27.3	9.1
Social studies	14.3	68.8	7.8	9.1
Science	13.0	68.2	10.4	8.4
Art	14.9	68.8	7.8	8.4
Music	14.3	68.8	8.4	8.4
Motor/PE	17.5	63.6	9.7	9.1
Expectations for Future Success				
Chances this child will be ready to progress to 4th grade as scheduled at the end of primary	26.0	48.7	17.5	7.8
Chances of completing high school	26.0	53.3	12.3	8.4
Chances of successful transition to college, workplace, or military	24.0	49.4	17.5	9.1

N=137

In terms of teachers' ratings of the former KERA participants' attainment of Kentucky's Six Learning Goals, approximately three fourths of the children were judged to be achieving as well or better than the rest of the children in their classes. The lowest rated area was in Thinking and Solving Problems with 68 percent of the children judged to be doing as well or better. In the highest rated area, Becoming Self-Sufficient, 78 percent of the children were rated to be doing as well or better than most of the children in their class. Fewer than a fourth of the former KERA preschool participants were judged to be doing less well than their classmates; the range was 15 percent in Becoming Self-Sufficient to 25 percent in Thinking and Problem Solving.

A similar pattern occurred when teachers were asked to rate the former KERA participants' performance in various areas of the primary curriculum. Two-thirds or more of the children were rated to be doing as well or better than most of their classmates in all areas of the curriculum, with reading, writing, and mathematics being the three areas in which they were rated lowest and social studies, science, art, music, and motor/physical education being the areas in which they were rated higher.

In terms of teachers' ratings of the former KERA participants' expectations for future success, approximately three-fourths of the children were judged to be doing as well or better than most of their classmates in their readiness to progress to fourth grade at the end of the primary program, in their chances of completing high school, and in their chances of making a successful transition to college, the workplace, or the military.

Teachers' Ratings of Primary 2 (First Grade) Students' Academic Progress and Expectations for Future Success

When the teachers of Primary 2 students were asked to rate the academic progress and expectations for future success of former KERA participants and the comparison children in their age group, the patterns were very similar to those found with the Primary 1 children. The results are presented in Tables 32 and 33.

Table 32.
Percentage of KERA Primary 2 (First Grade) At-Risk Children Rated by Teachers to be Doing Better, the Same, or Not as Well as Most of the Children in their Classes

PRIMARY TEACHER SURVEY	Better	The Same	Not as Well	Missing
Learning Goals				
Using basic communication & math skills	27.5	42.5	24.0	6.0
Applying core concepts and principles	21.9	47.2	24.9	6.0
Becoming self-sufficient	28.3	45.5	20.2	6.0
Being a responsible group member	27.4	45.5	21.5	6.0
Thinking and solving problems	23.2	41.6	29.2	6.0
Integrating new knowledge and past learning	23.6	46.4	24.0	6.0
Performance in Primary Curriculum				
Reading	27.0	34.8	32.2	6.0
Mathematics	21.9	48.5	23.6	6.0
Writing	20.6	43.8	29.6	6.0
Social studies	15.9	58.8	18.9	6.4
Science	15.5	58.8	19.3	6.4
Art	14.2	70.8	9.0	6.0
Music	9.0	78.1	6.9	6.0
Motor/PE	12.2	76.4	5.6	6.0
Expectations for Future Success				
Chances this child will be ready to progress to 4th grade as scheduled at the end of primary	27.5	45.5	21.0	6.0
Chances of completing high school	27.9	50.6	15.0	6.4
Chances of successful transition to college, workplace, or military	24.9	44.6	23.6	6.9

N=215

Table 33.
Percentage of Primary 2 (First Grade) Comparison Children Rated by Teachers to be Doing Better, the Same, or Not as Well as Most of the Children in their Classes

PRIMARY TEACHER SURVEY	Better	The Same	Not as Well	Missing
Learning Goals				
Using basic communication & math skills	21.1	41.6	27.5	9.9
Applying core concepts and principles	19.7	40.9	29.6	9.9
Becoming self-sufficient	23.9	45.8	20.4	9.9
Being a responsible group member	22.5	45.8	21.1	10.6
Thinking and solving problems	19.0	38.0	32.4	10.6
Integrating new knowledge and past learning	21.8	38.0	30.3	9.9
Performance in Primary Curriculum				
Reading	19.7	33.8	35.9	10.6
Mathematics	21.8	43.0	25.4	9.9
Writing	18.3	35.9	35.2	10.6
Social studies	13.4	53.5	22.5	10.6
Science	14.8	51.4	23.2	10.6
Art	12.0	67.6	9.9	10.6
Music	10.6	72.5	6.3	10.6
Motor/PE	13.4	66.9	9.2	10.6
Expectations for Future Success				
Chances this child will be ready to progress to 4th grade as scheduled at the end of primary	23.2	39.4	26.8	10.6
Chances of completing high school	26.8	48.6	14.8	9.9
Chances of successful transition to college, workplace, or military	22.5	43.7	23.2	10.6

N=123

When ranking the children's attainment of Kentucky's Learning Goals, the teachers judged two-thirds or more of the former KERA preschool participants to be doing as well or better than most of the other children in their class.

Ratings were similar for teacher judgements of the children's performance in various areas of the primary curriculum. Nearly two-thirds or more were rated to be doing as well or better than their classmates. Again as with the primary one students the children's progress in reading, writing, and mathematics was rated lower than their progress in social studies, science, art, music, and motor/physical education.

In terms of their expectations for the children's future success, teachers judged that nearly three fourths of these children had equal or better chances of progressing to the fourth grade with their peers, of completing high school, or of making a successful transition to college, the workplace, or the military.

The teachers' ratings of the former KERA preschool participants were then compared to their ratings of the same age comparison children (See Table 34). In none of the areas of academic progress or expectations for future success were the KERA preschool participants rated significantly different from their comparison classmates although their mean ratings were slightly higher in almost all areas. Thus, it appears that teachers view former KERA participants to be performing the same as the comparison children during the early years of primary school.

Table 34.
***Means of Items in the Primary Teacher Survey of Economically At-Risk KERA Primary 2 (First Graders) and Comparison Children**

PRIMARY TEACHER SURVEY	KERA (N=218)	Comparison (N=128)	p
Learning Goals			
Using basic communication & math skills	1.04	0.94	0.23
Applying core concepts & principles	0.97	0.90	0.39
Becoming self-sufficient	1.09	1.05	0.61
Being a responsible group member	1.06	1.02	0.65
Thinking & solving problems	0.94	0.86	0.35
Integrating new knowledge & past learning	1.00	0.91	0.32
Performance in Primary Curriculum			
Reading	0.95	0.83	0.18
Mathematics	0.98	0.97	0.87
Writing	0.90	0.82	0.30
Social Studies	0.97	0.91	0.37
Science	0.96	0.91	0.52
Art	1.05	1.03	0.67
Music	1.02	1.05	0.50
Motor/PE	1.07	1.05	0.79
Expectations for Future Success			
Chances this student will be ready to progress to 4th grade as scheduled at the end of primary	1.07	0.97	0.22
Chances of completing high school	1.14	1.14	0.97
Chances of a successful transition to college, workplace, or military	1.01	1.00	0.86

** Ratings were on a scale of 0-2 with 0 = Not as Well, 1 = About the same, and 2 = Better than other children in their classes.*

Teachers' Ratings of Primary 3 (Second Grade) Students' Academic Progress and Expectations for Future Success

As with the two younger age groups, teachers rated the academic progress and expectations for future success of the Primary 3 former KERA preschool participants to be the same or better than most of the children in their class. (See Tables 35 and 36).

Table 35.
Percentage of KERA Primary 3 (Second Grade) At-Risk Children Rated by Teachers to be Doing Better, the Same, or Not as Well as Most of the Children in their Classes

PRIMARY TEACHER SURVEY	Better	The Same	Not as Well	Missing
Learning Goals				
Using basic communication & math skills	25.1	46.4	20.8	7.7
Applying core concepts and principles	22.2	44.0	25.6	8.2
Becoming self-sufficient	28.0	44.0	20.3	7.7
Being a responsible group member	22.7	50.2	19.3	7.7
Thinking and solving problems	21.3	40.1	30.9	7.7
Integrating new knowledge and past learning	23.2	43.5	24.6	8.7
Performance in Primary Curriculum				
Reading	25.6	38.2	28.5	7.7
Mathematics	24.6	45.4	22.2	7.7
Writing	18.4	44.0	29.5	8.2
Social studies	15.0	60.9	16.4	7.7
Science	15.0	60.9	16.4	7.7
Art	11.6	65.7	12.1	10.6
Music	9.2	72.5	7.3	11.1
Motor/PE	12.6	68.6	8.2	10.6
Expectations for Future Success				
Chances this child will be ready to progress to 4th grade as scheduled at the end of primary	27.5	43.0	21.7	7.7
Chances of completing high school	29.5	45.9	15.9	8.7
Chances of successful transition to college, workplace, or military	23.2	44.9	23.2	8.7

N=179

Table 36.
Percentage of Primary 3 (Second Grade) Comparison Children Rated by Teachers to be Doing Better, the Same, or Not as Well as Most of the Children in their Classes

PRIMARY TEACHER SURVEY	Better	The Same	Not as Well	Missing
Learning Goals				
Using basic communication & math skills	27.7	34.9	26.5	10.8
Applying core concepts and principles	28.9	31.3	31.3	8.4
Becoming self-sufficient	21.7	39.8	30.1	8.4
Being a responsible group member	28.9	34.9	27.7	8.4
Thinking and solving problems	24.1	32.5	34.9	8.4
Integrating new knowledge and past learning	26.5	38.6	26.5	8.4
Performance in Primary Curriculum				
Reading	30.1	25.3	33.7	10.8
Mathematics	30.1	33.7	26.5	9.6
Writing	22.9	32.5	32.5	12.1
Social studies	16.9	45.8	25.3	12.1
Science	20.5	42.2	25.3	12.1
Art	14.5	57.8	14.5	13.3
Music	13.3	60.2	13.3	13.3
Motor/PE	14.5	63.9	9.6	12.1
Expectations for Future Success				
Chances this child will be ready to progress to 4th grade as scheduled at the end of primary	34.9	31.3	25.3	8.4
Chances of completing high school	34.9	36.1	20.5	8.4
Chances of successful transition to college, workplace, or military	26.5	36.1	28.9	8.4

N=70

Almost two-thirds of the former KERA preschool participants were judged to have done as well or better than their same age peers in the attainment of Kentucky's Learning Goals. Similar patterns were found in the teachers' ratings of the children's performance in the major areas of the primary curriculum, with reading, writing, and mathematics ranked lower than social studies, science, art, music, and motor/physical education.

Over two-thirds of the former KERA participants were expected to do as well or better than their peers in terms of their expected progress to fourth grade, their high school completions, and their transitions to college, the workplace, or the military.

The mean teacher ratings for the KERA preschool participants were then compared to the mean ratings of the comparison children. Their ratings were almost identical in most areas and in no area were there significant differences in the teachers' judgements of the academic progress and expectations for future success between the former KERA preschool participants and their same age comparisons. The largest difference, though not significant, was in favor of the KERA participants in the area of Becoming Self-Sufficient. Again as with their judgements of the Primary 1 students, the teachers of Primary 2 children appear to view the former KERA participants to be performing similarly to the comparison children.

Table 37.
***Means of Items in the Primary Teacher Survey of Economically At-Risk KERA Primary 3 (Second Graders) and Comparison Children**

PRIMARY TEACHER SURVEY	KERA (N=183)	Comparison (N=72)	p
Learning Goals			
Using basic communication & math skills	1.05	1.01	0.74
Applying core concepts & principles	0.96	0.97	0.92
Becoming self-sufficient	1.08	0.91	0.08
Being a responsible group member	1.04	1.01	0.81
Thinking & solving problems	0.89	0.88	0.90
Integrating new knowledge & past learning	0.98	1.00	0.87
Performance in Primary Curriculum			
Reading	0.97	0.96	0.93
Mathematics	1.03	1.04	0.89
Writing	0.88	0.89	0.91
Social Studies	0.98	0.90	0.35
Science	0.98	0.95	0.65
Art	0.99	1.00	0.94
Music	1.02	1.00	0.74
Motor/PE	1.05	1.05	0.93
Expectations for Future Success			
Chances this student will be ready to progress to 4th grade as scheduled at the end of primary	1.06	1.11	0.68
Chances of completing high school	1.15	1.16	0.93
Chances of a successful transition to college, workplace, or military	1.00	0.97	0.79

**Ratings were on a scale of 0-2 with 0 = Not as well, 1 = About the same, and 2 = Better than other children in their classes.*

Teachers' Ratings of Primary 4 (Third Grade) Students' Academic Progress and Expectations for Future Success

When teachers rated the academic progress and expectations for future success of the former KERA preschool participants during their last year in primary school, they judged almost 60 percent of the children to be doing as well or better than most of the other children in terms of their attainment of Kentucky's Learning Goals. Almost 30 percent of the children were judged to be doing less well, and teachers omitted rating approximately 13 to 15 percent of the children on these items.

Table 38.
Percentage of KERA Primary 4 (Third Grade) At-Risk Children Rated by Teachers to be Doing Better, the Same, or Not as Well as Most of the Children in their Classes

PRIMARY TEACHER SURVEY	Better	The Same	Not as Well	Missing
Learning Goals				
Using basic communication & math skills	19.4	38.7	27.4	14.5
Applying core concepts and principles	19.4	40.3	25.8	14.5
Becoming self-sufficient	32.3	27.4	25.8	14.5
Being a responsible group member	25.8	32.3	29.0	12.9
Thinking and solving problems	21.0	37.1	29.0	12.9
Integrating new knowledge and past learning	22.6	37.1	27.4	12.9
Performance in Primary Curriculum				
Reading	22.6	32.3	29.0	16.1
Mathematics	19.4	37.1	29.0	14.5
Writing	19.4	30.7	35.5	14.5
Social studies	22.6	45.2	17.7	14.5
Science	22.6	41.9	19.4	16.1
Art	19.4	56.5	9.7	14.5
Music	16.1	66.1	4.8	12.9
Motor/PE	19.4	61.3	6.5	12.9
Expectations for Future Success				
Chances this child will be ready to progress to 4th grade as scheduled at the end of primary	25.8	29.0	32.3	12.9
Chances of completing high school	24.2	41.9	21.0	12.9
Chances of successful transition to college, workplace, or military	21.0	32.3	33.9	12.9

N=50

Table 39.
Percentage of KERA Primary 4 (Third Grade) Comparison Children Rated by Teachers to be Doing Better, the Same, or Not as Well as Most of the Children in their Classes

PRIMARY TEACHER SURVEY	Better	The Same	Not as Well	Missing
Learning Goals				
Using basic communication & math skills	38.1	28.6	26.2	7.1
Applying core concepts and principles	33.3	38.1	21.4	7.1
Becoming self-sufficient	35.7	31.0	26.2	7.1
Being a responsible group member	38.1	34.5	20.4	7.1
Thinking and solving problems	29.8	33.3	29.8	7.1
Integrating new knowledge and past learning	34.5	33.3	25.0	7.1
Performance in Primary Curriculum				
Reading	36.9	27.4	28.6	7.1
Mathematics	34.5	33.4	25.0	7.1
Writing	29.8	28.6	34.5	7.1
Social studies	29.8	39.3	23.8	7.1
Science	29.8	38.1	25.0	7.1
Art	25.0	59.5	8.3	7.1
Music	15.5	70.2	7.1	7.1
Motor/PE	21.4	66.7	4.8	7.1
Expectations for Future Success				
Chances this child will be ready to progress to 4th grade as scheduled at the end of primary	36.9	32.1	23.8	7.1
Chances of completing high school	40.5	32.1	19.1	8.3
Chances of successful transition to college, workplace, or military	36.9	31.0	25.0	7.1

N=77

The ratings of the KERA children's performance in various areas of the primary curriculum ranged from 55 percent to 82 percent in terms of the number of children who were judged to be performing as well or better than the rest of the children. Again, the KERA children were rated lowest in their performance in reading, mathematics, and writing; somewhat higher in social studies and science; and highest in art, music, and motor/physical education.

In their ratings of the KERA children's chances of being promoted to fourth grade, teachers indicated that they felt that 55 percent of the former preschool participants were doing as well or better than their classmates. They gave a similar rating to their chances of making a successful transition to college, the workplace, or the military. Almost two-thirds of the KERA participants were rated as having equal or better chances of graduating from high school as the other children in their classes.

The ratings of the former KERA preschool participants were then compared to the ratings of the comparison children. As with the two younger age levels, no significant differences were found in the teachers' ratings of the two groups. However, the differences that did exist, though not significant, favored the comparison children.

Table 40.
***Means of Items in the Primary Teacher Survey of Economically At-Risk KERA Primary 4 (Third Graders) and Comparison Children**

PRIMARY TEACHER SURVEY	KERA (N=52)	Comparison (N=77)	p
Learning Goals			
Using basic communication & math skills	0.91	1.13	0.12
Applying core concepts & principles	0.92	1.13	0.13
Becoming self-sufficient	1.08	1.10	0.85
Being a responsible group member	0.96	1.19	0.10
Thinking & solving problems	0.91	1.00	0.51
Integrating new knowledge & past learning	0.94	1.10	0.26
Performance in Primary Curriculum			
Reading	0.92	1.09	0.26
Mathematics	0.89	1.10	0.12
Writing	0.81	0.95	0.35
Social Studies	1.06	1.06	0.95
Science	1.04	1.05	0.92
Art	1.11	1.18	0.52
Music	1.13	1.09	0.64
Motor/PE	1.15	1.18	0.73
Expectations for Future Success			
Chances this student will be ready to progress to 4th grade as scheduled at the end of primary	0.93	1.14	0.14
Chances of completing high school	1.04	1.23	0.15
Chances of a successful transition to college, workplace, or military	0.85	1.13	0.05

**Ratings were on a scale of 0-2 with 0 = Not as well, 1 = About the same, and 2 = Better than other children in their classes.*

Summary of the Teachers' Ratings of Children's Academic Performance and Expectations for Future Success

It is encouraging that at all age levels, there were no significant differences between the teachers' ratings of the former KERA preschoolers and their ratings of the comparison children who came from a variety of income and ability levels.

On the other hand, as the children grew older the percentage of former KERA preschool children rated to be doing as well or better than their peers decreased somewhat (See Table 41). It will require longitudinal research to determine whether or not this is a meaningful trend that will eventually result in a fade out effect. It is also important to note that the older Cohort 1 children were participants in the KERA Preschool Program during the first year of implementation (1990-1991) when program quality was lower than in subsequent years of implementation. At this time, however, it appears that based upon teachers' ratings of academic competence, the KERA preschool program is achieving the goal of enabling the KERA preschool participants to do as well as a random sample of their peers, many of whom come from higher income levels.

Table 41.
Sum of Percentage of KERA Children Doing Better and the Same Estimated by Teachers in the 1995 Primary Teacher Survey

PRIMARY TEACHER SURVEY	Sum of Doing Better and The Same			
	Primary 1	Primary 2	Primary 3	Primary 4
Learning Goals				
Using basic communication & math skills	74.6	70.0	71.5	58.1
Applying core concepts & principles	72.7	69.1	66.2	59.7
Becoming self-sufficient	77.9	73.8	72.0	59.7
Being a responsible group member	71.4	75.5	73.0	58.1
Thinking and solving problems	68.2	64.8	61.4	58.1
Integrating new knowledge & past learning	70.1	70.0	66.7	59.7
Performance in Primary Curriculum				
Reading	67.5	61.8	63.8	54.8
Mathematics	72.1	70.4	70.1	56.5
Writing	63.6	64.4	62.3	50.0
Social studies	83.1	74.7	75.9	67.7
Science	81.2	74.2	75.9	64.5
Art	83.8	85.0	77.3	75.8
Music	83.1	87.1	81.6	82.3
Motor/PE	81.2	88.4	81.2	80.6
Expectations for Future Success				
Chances this child will be ready to progress to 4th grade as scheduled at the end of primary	74.7	73.0	70.5	54.8
Chances of completing high school	79.2	78.5	75.4	66.1
Chances of successful transition to college, workplace, or military	73.5	69.5	68.1	53.2

N=593

Teacher Ratings of Primary 1, 2, 3, and 4 (Kindergarten - 4th Graders) Students' Social Skills, Academic Competence, and Behavior -- Cohorts 1, 2, 3, and 4

The results from the Social Skills Rating Scale completed by teachers and parents are reported in Table 42 for KERA preschool participants and comparison groups in each of the four cohorts. Overall, the findings across all cohorts indicate that KERA participants are generally within the average range for their age and grade levels. These findings also hold true across the three areas of social skills, problem behaviors, and academic competence. Teacher and parent ratings are generally in agreement in their views of these children as socially more similar to their peers than different.

Table 42.
Mean Rating on Teachers' and Parents' Social Skills Ratings Scale for Economically At-Risk KERA and Comparison Children in Cohorts 1, 2, 3, and 4

		Primary 1 Cohort 4 (Kindergarten) KERA	Primary 1 Cohort 4 (Kindergarten) Comparison	Primary 2 Cohort 3 (1st Grade) KERA	Primary 2 Cohort 3 (1st Grade) Comparison	Primary 3 Cohort 2 (2nd Grade) KERA	Primary 3 Cohort 2 (2nd Grade) Comparison	Primary 4 Cohort 1 (3rd Grade) KERA	Primary 4 Cohort 1 (3rd Grade) Comparison
Social Skills									
Teacher	M	98.25 (N=134)	98.75 (N=172)	98.60 (N=211)	96.72 (N=123)	97.48 (N=188)	96.46 (N=74)	94.33 (N=54)	102.30* (N=74)
Parent	M	96.87 (N=61)	97.63 (N=91)	98.41 (N=106)	95.51 (N=70)	99.77 (N=91)	99.24 (N=41)	98.00 (N=22)	103.06 (N=49)
Problem Behavior									
Teacher	M	102.04 (N=134)	102.58 (N=172)	102.24 (N=211)	103.51 (N=123)	103.31 (N=188)	103.55 (N=74)	107.76 (N=74)	101.09** (N=74)
Parent	M	100.90 (N=61)	103.52 (N=91)	105.95 (N=106)	107.31 (N=70)	102.18 (N=91)	104.02 (N=41)	103.14 (N=22)	98.69 (N=49)
Academic Competence									
Teacher	M	92.63 (N=34)	94.34 (N=172)	92.26 (N=211)	91.82 (N=123)	93.22 (N=188)	92.96 (N=74)	90.28 (N=54)	94.30 (N=74)

* $p < .01$
** $p < .05$

Over the last several years the SSRS results consistently have suggested a positive trend indicating that children who participated in KERA preschool programs are rated by teachers and parents as no different than their peers in the primary levels one, two, and three. These results suggest that as an outcome of their participation in KERA preschool programs, economically at-risk children overcome any earlier social skills deficits associated with their socioeconomic status and appear to be as socially well-adjusted as their more economically-advantaged peers during the early transitional years in school.

These results appear to maintain during the first years of the primary program. However, for the last two years, teachers have consistently reported significant differences in social skills and problem behaviors for the oldest children in Cohort 1, as comparison children have been rated by teachers as demonstrating better social skills and fewer problem behaviors than the former KERA Cohort 1 preschool children when they were in Primary 3 (second grade) and Primary 4 (third grade). A preliminary longitudinal analysis of each cohort as they progress through primary levels suggests that teacher social skills ratings gradually decline while problem behavior ratings gradually increase. It should be noted that although scores are changing, they remained within the average range. However, this trend is most pronounced for Cohort 1 and raises questions about how the preschool experiences of these children may have differed from later cohorts. It is also possible that the effects of one year of preschool program may eventually fade as students progress through the primary program. Further research in this area is warranted.

Behavioral Adjustment During Transition from Preschool to Kindergarten

Because the transition from preschool to kindergarten is recognized as a important adjustment period for young children, an effort was made to evaluate the behavioral adjustment of KERA preschool participants in comparison to their peers. In order to measure behavioral adjustment in more detail, the Teacher Rating Scales of the Behavior Assessment System for Children (BASC) was administered to a randomly selected representative sample of kindergarten children including a group of children who were former KERA preschoolers and a group of children who did not attend KERA preschool. The purpose of this effort was to determine if participation in KERA preschool programs had any impact on reducing the prevalence of behavioral maladjustment among economically at-risk children as they made the transition into the primary program.

The mean scores for the subscales of the TRS are reported for both KERA participant and comparison kindergarten groups in Table 43. Mean scores on all subscales for both groups were within the Average range (41-59). The results indicate that these groups were more similar than different. Significant differences emerged on only two subscales. Former KERA preschool participants were observed by their kindergarten teachers to be aggressive more frequently ($\underline{M}$ = 48.21) than their peers ($\underline{M}$ = 44.41). Former KERA preschoolers were also rated by their teachers as being attentive less often ($\underline{M}$ = 50.36) than their kindergarten classmates ($\underline{M}$ = 45.87). However, it should be noted that while these differences were statistically significant, they fall within the average range and thus they are not indicative of children experiencing serious behavioral or emotional adjustment difficulties. In summary, it appears that economically at-risk children making the transition from KERA preschool programs to kindergarten are viewed by their teachers as similar to their peers in terms of successful behavioral adjustment to school. However, although these results are positive, over time, these findings may reflect the same

trends present in the Social Skills Rating Scales. Whether this group of students will begin to experience more difficulties in the later primary levels may warrant further follow-up study.

Table 43.
Means and Standard Deviations of BASC for KERA and Preschool Participants During Kindergarten

BASC-TRS Subdomain		KERA (N=175)	Comparison (N=111)	p
Hyperactivity	M	45.71	42.48	
	SD	10.87	11.27	
Aggression	M	48.21	44.41	.03*
	SD	11.74	11.24	
Anxiety	M	51.00	47.68	
	SD	31.45	10.56	
Depression	M	45.34	43.27	
	SD	8.43	9.14	
Somatization	M	46.33	45.70	
	SD	7.92	9.86	
Atypcial	M	46.46	44.29	
	SD	7.75	6.95	
Withdrawn	M	45.25	42.59	
	SD	9.46	9.38	
Attention	M	50.36	45.87	.01**
	SD	12.04	11.17	
Adaptability	M	49.98	51.88	
	SD	11.54	11.63	
Social Skills	M	48.12	50.66	
	SD	10.87	11.81	
Externalizing	M	46.77	43.62	
	SD	11.81	10.95	
Internalizing	M	46.19	45.23	
	SD	8.94	8.74	
Behavioral Symp.	M	46.91	43.69	
	SD	9.78	9.60	
Adaptive Skills	M	48.82	51.40	
	SD	11.44	11.67	

* $p<.05$
** $p<.01$

School Attendance

Attendance of Former KERA Preschool Participants and Comparison Children

School attendance is an important indicator of school success as a high absence rate usually inhibits a child's academic progress. An attempt was made to determine whether former KERA preschool participants attended school at the same rate as the comparison children who represented a wide range of income and ability levels. The teachers of both groups of these children were asked to complete a questionnaire in which they indicated the number of days that the children had been present and absent as of April 1, 1995. These data are summarized in Table 44.

Table 44.
***Attendance of Former KERA Preschool Participants and Comparison Children in Primary Classrooms**

		KERA		Comparison	
		Present	Absent	Present	Absent
Primary One	M	122	8	114	8
(Kindergarten)	N	171		14	
Primary Two	M	124	6	124	6
(First Grade)	N	238		128	
Primary Three	M	127	5	125	5
(Second Grade)	N	192		80	
Primary Four	M	127	6	129	5
(Third Grade)	N	56		75	

**Note: Teachers reported number of days that children were present and absent as of April 1, 1995.*

The data for the Primary 1 (Kindergarten) children must be viewed with caution since the number of children in the comparison group is so small that the absences of a few children could seriously skew the data.

An examination of the attendance figures for Primary 2, Primary 3, and Primary 4 children indicate that the attendance rates for both KERA participants and their comparisons are almost identical. Thus, it appears that former KERA participants' attendance rates are equal to the rates of a random sample of their classmates.

Referral to Services

Teachers were asked to report the number of children they had referred to services and the number of children in their classes that were receiving services. Table 45 summarizes these findings. It is apparent from this teacher reporting that KERA preschool children are receiving support services earlier in their school careers than the comparison children. Otherwise, the patterns of referral to special services are similar for former KERA participants and nonparticipants during their primary school years and there do not appear to be any consistent trends in the number and types of services referred and delivered to children who had attended a KERA preschool program and those who had not.

Table 45.
Percentage of 1994-95 KERA and Comparison Preschool Children Referred to and Receiving Services

		Services Referred				Services Referred			
		ESS	Ch 1	FR/Y	SE	ESS	Ch 1	FR/Y	SE
Preschool									
KERA	N=326	2.8	4.0	7.1	13.5	0	3.7	5.2	13.2
Comparison	N=68	0	0	0	0	0	0	0	0
Primary 1 (Kindergarten)									
KERA	N=221	8.6	15.8	8.6	6.8	5.4	16.3	7.7	12.7
Comparison	N=18	11.1	0	0	5.6	11.1	5.6	0	0
Primary 2 (First Grade)									
KERA	N=274	11.0	24.5	3.7	4.7	8.4	31.4	2.9	6.2
Comparison	N=158	8.9	25.3	5.1	4.4	6.3	29.1	3.8	3.8
Primary 3 (Second Grade)									
KERA	N=248	15.7	28.6	7.3	6.9	12.9	32.3	5.7	4.4
Comparison	N=101	25.7	29.7	10.9	6.9	13.9	27.7	8.9	6.9
Primary 4 (Third Grade)									
KERA	N=76	21.1	29.0	10.5	9.2	19.7	36.8	7.9	7.9
Comparison	N=98	16.3	22.5	3.1	7.1	19.4	29.6	3.1	5.1

ESS *Extended School Services*
Ch 1 *Chapter 1*
FR/Y *Family Resource/Youth Service Center*
SE *Special Education*

Evaluation Question 4.

Are parents satisfied with the KERA Preschool Programs and do they think the program has had positive effects on their child's development?

Parent Survey

One of the goals of the project during the 1994-1995 school year was to survey parents for the purposes of determining: a) their perception of the types of parent involvement activities that their child's school offered to them, b) the extent to which parents were satisfied with the KERA Preschool Programs, c) the extent to which parents perceived that the programs have had a positive impact on their child and their family. A similar survey was conducted during the 1992-1993 evaluation year. However, during the 1992-1993 evaluation, the survey focused primarily on the types of activities that were offered to parents and included five questions about the extent to which the parents were satisfied with the KERA Preschool Programs. The 1994-1995 survey was expanded in order to assess parents' perceptions of different aspects of the programs. Thus, the survey included a combination of items from the 1992-1993 survey and new items designed to provide a more complete evaluation of consumer satisfaction. A copy of the 1994-1995 survey is included in Appendix A.

The survey was sent to two sets of parents. First, surveys were sent to parents of each of the KERA Preschool children who had been tested during the 1994-1995 evaluation. In order to obtain information from more parents, we also sent a copy of the survey to the parents of all of the other children who attended the KERA Preschool Programs in which we had tested children during the 1994-1995 evaluation. The surveys were sent to the classroom teachers who were asked to send the surveys home with the children. Each survey included a stamped, pre addressed envelope in which the parents could return the survey directly to the project office. A total of 1440 surveys were sent to teachers, and 387 surveys were returned by parents. This reflects a 27% return rate. Of the 1440 surveys, 354 were mailed to parents of children we had tested. Of the 354 mailed, 102 were returned for a return rate of 29%. Of the 1086 surveys mailed to parents of children whom we had not tested, 285 were returned for a return rate of 26%.

While these return rates appear low, there are several factors that may have affected the return rates. First, since there were 64 teachers, a standard number of surveys were sent to each teacher. Thus, it is possible that teachers got more surveys than they had children in their classroom. We asked teachers to return any surveys they did not send home to parents but it is possible that they

did not all send the extra surveys back to the project office. Second, the surveys were mailed late in the school year because we felt that the parents needed to evaluate the whole school year. Since the surveys were sent out late in the school year, parents may have been receiving a great deal of other information from the school and thus overlooked the surveys. Time constraints prevented sending out reminders or additional copies of the surveys.

Results

We will report the results of the survey for the total group of parents as we had no reason to believe that the families of children who had been tested would respond differently than the parents of the other children in their classes. Table 46 provides a summary of the parents who completed the survey. A large majority of the surveys were completed by mothers (88.9%).

Table 46.
Type of Respondent for Parent Surveys

	Whole Group	
	N	%
Father *	22	5.7
Mother	344	88.9
Other	12	3.1
Foster	3	0.8
Guardian	2	0.5
Both Parents	4	1.0
Missing	0	0
Total	**387**	**100**

*N=387.

Table 47 includes information on the types of activities that parents reported that the school offered to them and the types of activities in which the parents chose to participate. The most common activities offered to parents were helping in the child's class, parent newsletters, parent meetings, home visits, conferences with teachers, activities to do at home, and attending field trips. Over 80% of the parents indicated that each of the these activities was offered to them. Of the remaining activities, at least a third of the parents responded that each activity was offered.

Table 47.
Number and Percentage of Parents Who Were Offered Activities by the School and the Number and Percentage of Parents Who Indicated They Had Participated in the Activities

Activities	Activities Offered by School		Activities in Which Parent Participated	
	N	%	N	%
Helping in Class	352	91.0	142	36.7
Conference with Teacher	352	91.0	286	73.9
Parent Meeting	351	90.7	240	62.0
Home Visits	351	90.7	286	73.9
Parent Newsletter	342	88.4	94	24.3
Activities to do with Child at Home	329	85.0	299	77.3
Attend Trips with Child's Class	320	82.7	180	46.5
Phone Call with Teacher	267	69.0	213	55.0
School Committees	252	65.1	46	11.9
Committee Meetings	172	44.4	56	14.5
SBDM Council	159	41.1	26	6.7
Notes Sent Between Teacher/Parent	129	33.3	67	17.3

*N=387.

In terms of activities in which parents chose to be involved, the most common activities were parent meetings, home visits, phone calls and conferences with the teachers, and activities to do with the child at home. At least 60% of all respondents indicated that they had participated in these activities. It is interesting to note that although home visits are required by the programs, only 91% of the parents indicated that home visits were offered to them and only 74% indicated that they had participated in the home visits.

Two other issues are important to note. First, there is a large discrepancy between some activities in terms of the number of parents who indicated they were offered the activity and the number who indicated they participated in the activity. For example, 91% of the parents indicated they were offered the opportunity to help in their child's classroom. However, only 37% indicated that they chose to help in the classroom. This type of discrepancy is found for over half of the items. This may suggest that programs are offering routine activities without surveying the parents to determine what types of activities parents would prefer. It also appears that parents of preschool children are seldom asked to participate on committees and the frequency with which parents participate in committees is even lower.

Parents were also asked to indicate what factors prevented them from participating in the activities that were offered by their child's program. Table 48 provides a summary of these data. Forty percent of the parents indicated that child care was a barrier at least part of the time, and 73% of the parents indicated that scheduling conflicts were sometimes a barrier. Approximately 25% of the parents indicated that transportation was a barrier. These figures, particularly those related to scheduling, suggest that the preschool programs may need to work more closely with parents to determine the nature and time of activities in which parents prefer to be involved.

Table 48.
The Extent to Which the Following Factors Prevented Parents From Being Involved in the Activities Offered by School

	Frequently		Sometimes		Not At All		Missing	
	N	%	N	%	N	%	N	%
Schedule Conflicts	161	41.6	121	31.3	70	18.1	35	9.0
Child Care	79	20.4	78	20.2	166	42.9	64	16.5
Transportation	43	11.1	50	13.0	216	55.8	78	20.2
Other 1	41	10.6	12	3.1	2	0.5	332	85.8
Other 2	2	0.5	2	0.5	1	0.3	382	98.7

*N=387

Parents were then asked to complete 13 additional items related to their satisfaction with the KERA Preschool Program. They rated each item on a five point Likert scale from strongly agree to strongly disagree. Table 49 presents the data representing parents' responses to these 13 items. In general, parents appeared very satisfied with all aspects of the programs. Over 95% of the parents indicated that the KERA Preschool Program was helpful to their child, and that they felt comfortable going to the school to talk with the teacher about their child. Over 85% of the parents indicated that they either agreed or strongly agreed with 10 of the 13 questions. On nine of the 13 questions, 90% of those parents indicated that they agreed or strongly agreed.

Table 49.
Responses to Items Related to Satisfaction with the KERA Preschool Program

	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
The KERA Preschool Program was helpful to my child	68.5	26.6	3.6	0.5	0.5
My child likes the KERA Preschool Program	68.0	23.8	5.9	0.8	0.3
I feel comfortable going to school to talk about my child's progress or problems	68.0	28.4	3.1	0.5	0.0
The teacher(s) know my child's needs and interests	67.4	27.1	3.9	0.8	0.3
The teacher(s) keep me informed of my child's progress in school	65.6	26.9	4.1	2.1	1.3
The staff of my child's KERA Preschool Program offered me sufficient opportunities to be involved.	64.6	29.2	4.1	1.8	0.0
I am pleased with the KERA Preschool Program	62.8	29.7	5.9	0.5	0.3
The school helps my child learn to solved problems and make decisions	56.8	33.9	8.3	0.5	0.0
When my child has a problem, I know someone at school with whom I can talk	55.8	34.9	4.7	3.4	0.8
The KERA Preschool Program was helpful to my family	42.9	38.2	17.1	0.5	0.8
I am involved in my child's preschool program	39.8	47.0	6.7	4.4	0.5
My opinions are valued by the school	39.3	34.6	19.9	3.4	1.0
I help plan and evaluate my child's educational progress with the teacher(s)	31.8	37.0	17.6	9.8	1.3

N=387.

However, there were three questions on which parents disagreed relatively more frequently. These questions related to the extent to which the programs were helpful to the family; the degree to which parents help plan and evaluate their child's program; and the extent to which parents perceive that the school values their opinion. On these three questions, 74% to 81% of the families agreed or strongly agreed. While these numbers are not significantly lower than the responses to the other 10 questions, they substantiate the concerns raised previously regarding parental input in determining the nature and time of involvement activities.

Major Findings

1. The overall rate of development for economically at-risk KERA preschool participants was significantly higher than that of a comparison group of income eligible peers who did not participate in the KERA Preschool Program.

2. Economically at-risk preschool children continue to demonstrate significant gains in the area of social development. As a result of participation in KERA preschool programs, these children enhance the skills necessary for their successful functioning in the social world of the classroom. Both parents and teachers note particular improvements in the children's development of self-control. As their social skills develop, the children's problem behaviors are observed less often.

3. Economically at-risk KERA preschool participants made significant gains from pretest to posttest in important early literacy skills, such as the ability to recognize and write the letters of the alphabet and in their knowledge of print concepts necessary for learning to read.

4. Economically at-risk KERA preschool participants made greater gains on measures of early literacy than their income eligible peers; however, these gains were not significantly higher.

5. African-American economically at-risk preschool participants achieved gains on all measures that equalled or exceeded White preschool participants, thus indicating that the KERA Preschool Program is meeting their needs as well as those of their white counterparts.

6. Longitudinal research investigating the social skills, academic competence, and behavioral adjustment of former KERA economically at-risk preschoolers during the primary years has consistently shown that participants do as well as or better than their same age classmates. Behavioral adjustment during the transitional year from preschool into kindergarten generally appears to be as positive for economically at-risk KERA preschoolers as for their peers from various socioeconomic backgrounds. Some evidence suggests that attention and aggression could be potential areas of difficulty for at-risk children, leading to differences from their classmates over time, and may warrant additional study in future evaluations.

7. When teachers of former KERA preschool participants were asked to rate the children's academic performance and their expectations for the children's future success in high school graduation and successful transition to work, the military, or post-secondary education, their ratings indicated that they expected these children to do as well or better than a comparison group of children from their classes.

8. Positive gains were observed across all groups of children with disabilities. The changes were most consistent for the children with developmental delays and speech delays as compared to the children with severe disabilities. The lack of a control group limits these findings. However, given that these children had significant delays prior to attending the KERA Preschool Program, the finding that some are gaining one month per month in intervention is important.

9. The oldest group of children who were in the KERA Preschool Program during the first year of implementation (1990-1991) continue to receive less favorable ratings on academic and social measures than a comparison group of randomly selected children. Longitudinal research is needed to determine whether this finding represents a fade out effect of the positive effects of preschool participation or simply the fact that the newly implemented program was of lower quality in 1990-1991 than in subsequent years.

10. The parent survey provided useful findings in two major areas. First, parents reported that a variety of activities were available to them and their family. Second, parents reported high levels of satisfaction with the KERA Preschool Programs in terms of the effect of the program on their children's development.

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